The Oil and Gas Journal

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BAKER
SAVE A WELL
CEMENT RETAINER

"For Friendly Service, and Dependable Products, Specify BAKER."

BAKER
CEMENT RETAINER

CASE STUDY NO. 406

PROBLEM: To squeeze off lower wet sand and protect upper oil zone

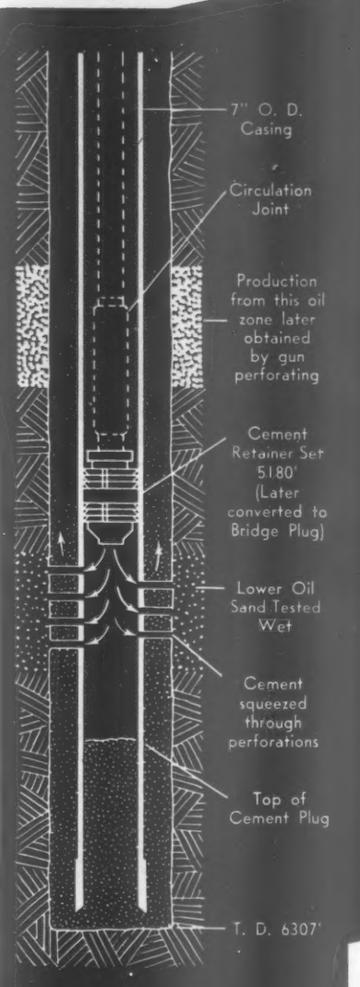
METHOD: Perform squeeze cement job with Baker Cement Retainer and then convert Retainer to Casing Bridge Plug

RESULT: Wet zone completely shut off; upper zone produced with no water

• DETAILS •

Field: Golden Meadows, La.
Depth of Well: 6307'
Depth Retainer Set: 5180'
Breakdown Pressure: 1400#
Final Pressure: 2500#

Quantity of Cement Mixed: 300 Sax
Number of Sax Put Away: 300
How Cement Discharged: through Perforations


7" O. D. Casing
Circulation Joint
Production from this oil zone later obtained by gun perforating
Cement Retainer Set 5180' (Later converted to Bridge Plug)
Lower Oil Sand Tested Wet
Cement squeezed through perforations
Top of Cement Plug
T. D. 6307'

Squeezing Off Lower Wet Zone with Baker Cement Retainer

6

A Case Study of an Actual Well Completion Problem Solved by Using the Baker Cement Retainer

IF you are confronted with water ms in your wells . . . problems which may be solved through the proper placement of cement and acids . . . it will pay you to in- e the Baker Cement Retainer. This device is daily solving many of l and unusual cementing, well repair, and well completion prob- ronting the industry today and it may be the solution to your

Complete information concerning the design, construction and operation of the Baker Cement Retainer and its many practical field applications will be found on pages 239-249 of the Baker Section of the Composite Catalog; also, in Baker Broadcast No. 17-A, a comprehensive, 40-page treatise, which will be sent to any oil man upon request.

BAKER OIL TOOLS, INC.
Main Office and Factory, 6000 S. Boyle Avenue
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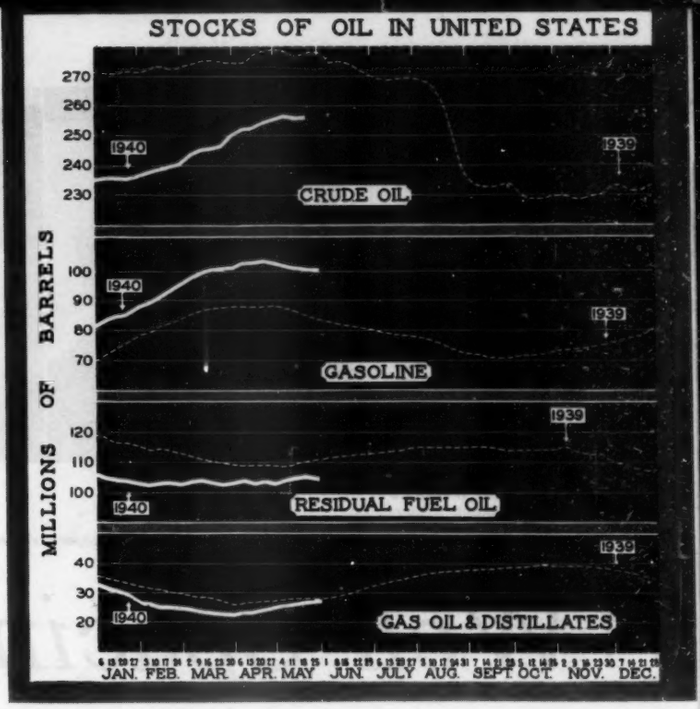
IMPORTANT CEMENT RETAINER APPLICATIONS INCLUDE:
Squeeze Jobs • Recementing • Cementing Behind Sections of Pipe • Reducing Gas/Oil Ratios • Series Cementing • Plugging off Bottom Fluids • Plugging Back to Upper Zones • Testing Upper Cased Formations • As a Heaving Plug • As a Bridge Plug at any Place in Casing or Liner • Open Hole Acidizing • Open Hole Squeeze Cementing

BAKER CEMENT RETAINER

Trends

Price Developments Reflect Variations In Basic Conditions



MARKET trends over the past few days, while mixed, were in most cases on the down side. In the east, Pennsylvania Grade crude prices were reduced 25 cents per barrel, the first reduction since September 1, 1938. The reduction ended a 17-month period during which the Pennsylvania Grade crude produced in Pennsylvania, West Virginia, Ohio and New York advanced to the highest level in several years. The advance was entirely due to a strong market for lubricating oils, which reached runaway proportions last fall following the start of the war. Since the first of the year the export market for these lubricating oils has fallen off and in recent weeks there has been a steady decline in prices on all grades of lubricants reaching the point where refiners could not operate profitably. Additional reductions will materialize unless the refined-market situation improves.

CRUDE PRODUCTION *3,837,429 bbl. daily average—down 8,254 bbl. One year ago 3,587,540 bbl.*

CRUDE STOCKS *257,647,000 bbl. as of May 18—up 568,000 bbl. One year ago 277,068,000 bbl.*

GASOLINE STOCKS *100,297,000 bbl. as of May 25—down 718,000 bbl. One year ago 84,952,000 bbl.*

RESIDUAL FUEL-OIL STOCKS *104,015,000 bbl. as of May 25—down 230,000 bbl. One year ago 110,792,000 bbl.*

GAS OIL AND DISTILLATES *28,356,000 bbl. as of May 25—up 1,011,000 bbl. One year ago 27,510,000 bbl.*

REFINERY RUNS *3,580,000 bbl. daily week ended May 25—down 85,000 bbl. One year ago 3,405,000 bbl.*

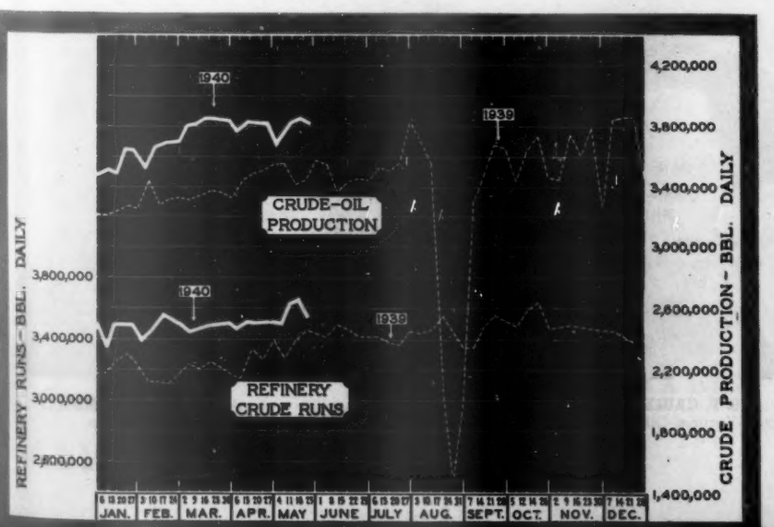
In California drastic reductions in gasoline prices became effective. This follows the breakdown in a marketing arrangement between large and small suppliers which has resulted in orderly distribution of gasoline output of special importance to the southern part of the state. The U. S. Supreme Court decision in the Madison case is said to have been a factor in the abandonment of a marketing program that had stabilized California's gasoline prices for several years. It is feared that the lower gasoline prices may be reflected shortly in posted crude-oil schedules. Prices for the low-gravity crudes were recently reduced due to a weak fuel-oil market.

Prices for heavy fuel oils were reduced from 10 to 15 cents per barrel at Gulf Coast and Atlantic seaboard points last week with reductions in diesel oils up to 25 cents per barrel in the east.

In contrast with these conditions, Mid-Continent and Middle Western crude markets are generally firm, with higher prices posted for crude oil produced in eastern Illinois and western Indiana fields. This has been brought about by the changed Illinois situation, where a substantial production decline is expected in the last half of the year. A base allowable for June of 1,335,530 bbl. daily has been announced for Texas by the Railroad Commission, a figure which is 128,000 bbl. under the average production of last week in that state. A reduction of 100,000 bbl. daily in Texas production next month would materially improve the state's statistical position and that of other areas dependent on it for supplies. The fact that in recent months Texas has been long on promises to keep its production within estimated needs, but short on performance, leads the industry to view the June projection with skepticism. Louisiana has announced a 12,000-bbl. daily reduction for June.

DAILY AVERAGE PRODUCTION FOR WEEK

	May 25, 1940	Bur. Mines May est. of demand	May state allowables	May 18, 1940
Oklahoma City	99,600	.....	.....	95,700
Seminole fields	38,025	.....	.....	37,775
Remainder of state	285,850			280,500
Total Oklahoma	423,475	408,100	408,100	413,975
East Texas	396,448	.....	.....	396,491
West Texas	263,746			262,204
North Central Texas	145,839			145,300
Texas Panhandle	73,087			71,643
East Central Texas	88,150	.....	.....	88,891
Texas Gulf Coast	386,055			385,460
Southwest Texas	110,399			110,000
Total Texas	1,463,724	1,344,200	1,421,176	1,459,989
North Louisiana	69,765	.....	.....	70,810
Gulf Coast Louisiana	234,397			229,598
Total Louisiana	304,162	264,500	293,080	300,408
California	607,300	592,600	592,600	623,750
Kansas	160,500	158,100	158,100	165,200
Arkansas	71,555	64,500	70,147	71,525
Mississippi	8,728	5,800	.....	8,280
Eastern fields	108,600	109,400	.....	110,600
Illinois	433,732	392,900	.....	436,050
Michigan	59,613	63,200	.....	61,040
New Mexico	107,690	103,900	107,000	106,630
Rocky Mountain area	88,350	93,800	.....	88,220
Total United States	3,837,429	3,601,000	.....	3,845,683



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D. R. KNOWLTON
Phillips Petroleum Co.

GUY H. WOODWARD
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S. W. DUHIG
Shell Union Oil Corp.

Shown on these pages are some of the speakers, authors of papers, chairmen of special committees, and presiding officers, who participated in the Fort Worth meeting

Well Spacing, Octane Race, Discussed at A.P.I. Meeting

By W. T. ZIEGENHAIN
and D. H. STORMONT

FORT WORTH, Tex., May 29.—The midyear meeting of the American Petroleum Institute held here this week was told that the optimum spacing of wells can lower investments 75 per cent on some reservoirs and was warned that the industry is threatened with being forced into a race for higher octane numbers to the benefit neither of its customers nor itself.

At least $2 above operating costs must be returned for every $1 invested in an oil well for the operator merely to break even, the Division of Production group session was told by Park J. Jones, petroleum engineer, of Fort Worth. He said economic as well as physical variables must affect the optimum spacing of wells, especially since the investment in an oil well now ranges from $20,000 to $220,000, with a 6 per cent interest rate doubling the principal each 12 years and the life of most wells running longer than 12 years. He listed the economic variables as dollars per well investment, rate of interest, allowable rate of recovery, royalty, income per barrel of oil produced, operating costs, and the economic limit.

Motorists would benefit more by giving their cars the same care they lavish upon new guns, fishing tackle, and cameras than by demanding gasoline of higher octane rating, the Institute was told, with a warning that the industry faces the threat of being forced into a race for higher octane numbers. Pending radical changes in automotive design, it was stated, there is no need thus to increase motor-fuel costs an estimated $150,000,000 a year because the expenditure of only $5 a year by each motorist for proper adjustment and maintenance would result in greater owner satisfaction.

INSTITUTE TO ABANDON PUBLIC RELATIONS WORK

FORT WORTH, Tex., May 28.—The executive committee of the American Petroleum Institute has submitted a recommendation to the board of directors of the Institute that the present public relations program be abandoned. This followed advice from legal heads of the industry to conform in detail to existing federal laws.

A wide division of opinion exists among leaders regarding the need for such a move at this time, but there appears to be no alternative. Approximately $80,000 has been appropriated each of the past 2 years for maintenance of the work which has been handled out of the New York offices through regional committees throughout the various states.

The information came from C. H. van Hartesveldt and H. W. Field, of the Atlantic Refining Co., Philadelphia, Pa., who reported that their tests of gasolines in popular makes of cars have revealed that the belief in high-octane motor fuels as cure-alls for performance ills has been accepted more widely than the facts warrant. Improvement in the performance of current-model cars through the use of higher-octane gasolines was said to be minor in comparison with the wide increase in refining costs involved.

It was explained that the tests had developed the conclusion that proper adjustment and maintenance of the average automobile was more effective than use of higher-octane fuels, and that it would be unwise to increase octane ratings to 80 from the present average of 74 at an estimated cost of $150,000,000, or almost 40 per cent of the industry's annual earnings.

"An increased cost of $5 per year for a motor vehicle, if used to pay for mechanical adjustments and tune-up of the engine," said the speakers, "would result in greater owner-satisfaction than this same amount of money spent furnishing a higher-octane gasoline."

Paul Truesdell, of Universal Oil Products Co., in an address on "Advertising as a Factor in Good Public Relations," said:

"If the oil industry isn't guilty, why is it always on the spot? Let's ask that question our-

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Socony-Vacuum Oil Co., Inc.

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Socony-Vacuum Oil Co., Inc.

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Gulf Oil Corp.

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Atlantic Refining Co.

C. H. VAN HARTESVELDT
Atlantic Refining Co.

CHARLES M. RIDGWAY
Pure Oil Co.

L. M. HENDERSON
Pure Oil Co.

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Pure Oil Co.

selves, and look for the answers. Let's look at ourselves first of all. If John Public doesn't know how respectable and efficient we are and what a good job we are doing for him, it is mostly our own fault. We have never told him our story. And we have had a good many internal fights within the industry, calling each other hard names, making serious accusations.

"The oil industry is big. Its operations are on a grand scale. It is rich. Its investment represents some 14 billion dollars, a great sum even in these days of big figures. The revenues of the big companies are measured in tens of millions. No matter if those revenues often do represent a return of only a cent or less for every dollar of invested capital—or even a loss—they are impressive by their very magnitude.

"John Public has gained the impression that bigness itself is a crime—let alone wealth—and 14 billion dollars is certainly big. He does not stop to consider—in fact, he does not even know—that a million people draw their living directly from the oil industry in wages and salaries. That means that an investment of some $14,000 is necessary to give one person a job. Yes, the oil industry has to be big.

"American motorists last year burned more than 23 billion gallons of gasoline, not to mention the other petroleum products consumed. Could any industry furnish such gigantic quantities of any product unless it was big?

"Yes, the industry is big; but it is not monopolistic, and it is not exclusive. Some of the smallest business units imaginable, thousands of single filling stations, scores of little skimming plants, hundreds of small producers, live and flourish year after year alongside the giants.

"John Public in general harbors no resentment against the automotive industry—rather, he looks at it with approval. He appreciates the comfort and pleasure his motor car gives him; the improvements constantly being made in it, while the price continually moves downward. Why not a smile of approval once in a while for the oil industry! The motor car would be utterly worthless without gasoline and lubricating oil—it could not run a mile."

Boyd on Outlook

A statement by W. R. Boyd, Jr., executive vice president of the Institute, concluded:

"Presupposing that the regulatory bodies recognize the various strong and weak points in the supply and demand position of petroleum, it appears that the industry's job during the coming summer is to replenish the inventories of products where necessary, while withdrawing larger than seasonal amounts from gasoline storage. If this occurs, a trend toward a more nearly balanced inventory position should develop. If it does not, no great amount of imagination will be require to foresee the consequences."

Van Covern's Estimate

Fred Van Covern, Institute director of statistics, concluded a review as follows:

"Should the coming winter prove to be the average of the past 10 winters, gas oil, and distillate fuel-oil demand will probably be about 108,000,000 bbl., or about 9 per cent greater than during the past winter. Should it be similar to last winter, colder than normal, the total demand will probably approximate 112,000,000 bbl., or about 13 per cent greater. Under these circumstances, the 38,000,000 bbl. of gas oil and distillate fuels in storage at refineries and at terminals on September 30, 1939, would again prove inadequate. It is my opinion that 48,000,000 bbl. in storage at refineries and terminals on September 30 next would result in more economic stock levels during next winter and prevent a scarcity of supply such as threatened in certain areas during the past winter."

The Institute learned from Herschel G. Smith, of Gulf Oil Corp., Philadelphia, of progress being made in developing laboratory tests of motor performance on various gasolines which are equivalent to road trials. The tests reported were based upon the A.I.L., or "acceleration-inertia-load," method, which permits of simultaneous study of the performances of motors used in popular makes of automobiles. Mr. Smith reported that the efficiency of motor-cooling systems and the outlet temperature of the water appeared to be important factors affecting the road performance of motor fuels, especially because of the winter use of automobiles and the increasing consumption of gasoline produced by cracking processes. It was said that the octane requirement for satisfactory operation would drop one whole octane number with each successive drop of 10° in cooling-water-outlet temperature. Even the use of antifreeze preparations was found to effect motor performance, the tests showing that the increase in octane-number requirements ranged from one for a 37 per

(Continued on Page 14)

OIL MEN DISCUSS INDUSTRIAL DEFENSE CORPS TO OPPOSE "FIFTH COLUMN" WAR

FORT WORTH, Tex., May 27.—Oil men attending the American Petroleum Institute's meeting have been discussing proposals to establish a National Industrial Defense Corps to combat "fifth column" activities and to defend industrial property and operations in case of war.

Organization of the corps is provided for in an amendment to the National Defense Act introduced recently by Senator Sheppard, of Texas, as originally proposed by the military affairs committee of the Houston, Tex., Chamber of Commerce. George A. Hill, Jr., president, Houston Oil Co., and vice president of the Institute, flew to the meeting from Washington, where he had discussed the plan with congressional leaders.

First to endorse Mr. Hill's support of the corps was Lt. Gen. John A. Hulen, of Fort Worth, retired commander of the Thirty-sixth Division, Texas National Guard, who addressed a general meeting of the Institute Wednesday on national defense. "From experience I feel such an organization is eminently necessary," General Hulen said, "and it would rapidly bring about the orderly restriction and control of subversive activities."

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Standard Oil Co. of California

F. L. MAKER
Standard Oil Co. of California

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Shell Oil Co., Inc.

B. H. ROBINSON
General Petroleum Corp.

H. T. BYCK
Shell Development Co.

French Inquiry May Indicate More Active Export Market

By H. STANLEY NORMAN

NEW YORK, May 28.—The first tangible evidence that the expanded European war is beginning to make inroads on the Allied stored supplies and probably aiso reflecting the defensive destruction of petroleum stocks in Holland and Belgium came to the American oil industry last week.

An inquiry came into the American market for two cargoes of motor gasoline from the French petroleum-buying commission for June and July loading. American refiners are bidding on the business, but it will not be known for approximately 2 weeks where the order will be filled. The inquiry from the French Navy for approximately 1,750,000 bbl. of residual fuel oil has been in the market for approximately 2 weeks and the business should be placed during the early part of June. Specifications call for two grades of residual oil. One grade sought would require addition of approximately 10 per cent gas oil to regular Bunker C and the other would require blending about 20 per cent gas oil. This is merely to give an approximate idea of the specifications involved in the fuel-oil inquiry and, of course, could be met by refinery adjustments.

Petroleum Consumption Increased

There can be no doubt that war on the scale existing for 3 weeks has vastly intensified the consumption of petroleum by all belligerents. T. P. Wright, of New York, director of engineering for the Curtis Wright Corp. (aviation), estimates that Germany is using 4,000 first-line fighting planes in the present assault and flying them up to 5 hours each day. It was also estimated that approximately 2,400 of the German planes in service are bombers and 1,600 of the pursuit type. Estimates on the motor-fuel consumption of bombers powered with multiple engines is from 90 to 150 gal. an hour, indicating that the consumption by the German bombing fleet may be from 216,000 to 360,000 gal. an hour.

Consumption by the pursuit planes was estimated at 90 to 116 gal. an hour, depending on the type of flying and the altitude. With 1,600 pursuit ships in service it is calculated that their motor-fuel consumption would be in the neighborhood of 160,000 gal. an hour. Averaging the extremes of consumption for bombers at 288,000 gal. an hour for the 2,400 ships, adding the 160,000 gal. per hour used in the pursuit fleet, and assuming the period of daily operation at 5 hours it is concluded that Germany is burning approximately 53,500 bbl. of aviation gasoline daily. Extending the calculation over a period of 3 weeks of intensive European activity it would appear that 1,123,500 bbl. of aviation motor fuel have been burned in the western European offensive.

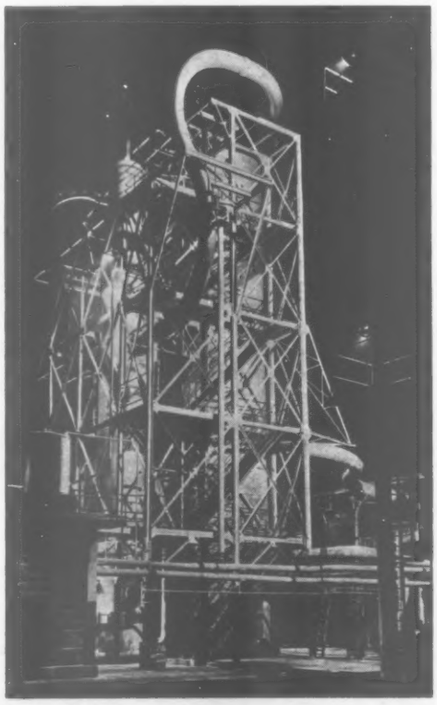
Important as the consumption of aviation gasoline appears to be under the present intensity of fighting it is probably insignificant compared to inferior motor fuel and diesel fuel used in the thousands of tanks, supply transports, and motorized gun units.

Furthermore, to gain a more vivid impression of petroleum consumed by the belligerents it must be considered that the Allies are counterattacking with an almost equal amount of equipment both on land and in the air.

The known vulnerability of Germany's petroleum supplies is the chief reason behind the Allies' predictions that the tide of battle will turn if the defenders can resist for 30 days. It is also the clue to concentration of the Royal Air Force strength on the bombing of supply lines, railroads, bridges, and highways behind the German line of advance and upon the important stocks of reserves at Hannover, Hamburg and other northern German cities.

Tank Tactics

Still another insight into the important role of petroleum in the fighting is the unvarying reports on tactics of the swift-moving German military machine. Light tanks and motorized artillery, protected by bombers, make a swift thrust into enemy country and then are compelled to wait until fuel supplies can be rushed up from the rear.



Night view of vacuum unit, Courchelettes refinery, near Douai, France, operated by Societe Generale des Huiles de Petrole, running oil from Iraq field

The flame-throwing light tanks used in the spearhead drives consume 30 gal. of fuel per hour and, sacrificing all else for speed, their reserve tanks carry only enough for 5 hours' operation. However, with literally thousands of light tanks, motorcycles, and motorized artillery pieces in action it is not difficult to visualize the drain on the Reich's petroleum supplies.

The drain on Allied petroleum supplies is no less, according to the best opinion. La Havre, probably the largest of French petroleum ports, is well south of the German advance into France.

Although they were only rumors and impressions of oil men in the East, word has circulated that German fighting units have meticulously avoided bombing petroleum stores and refineries in their path. This precaution is thought to be based on the German plan to capture unharmed all such military assets. Germany claimed to have captured 300,000 tons (about 2,500,000 bbl.) of "gasoline" at Amsterdam, but American oil men are informed that practically all petroleum stocks in the path of the Reich army were destroyed upon order of the Allied command. Reports have reached this country that the oil stocks at Amsterdam burned for 5 days and it is considered illogical that much of the known reserves there could have survived.

Warnings from the State Department to all American citizens in the Balkan and near eastern countries to evacuate will be ignored by the key men in the oil industry for the present, it was learned in New York last week. Key men in supervisory capacities for American oil interests in the countries specifically mentioned, including Rumania, Palestine, Turkey, and Iraq, will remain at their posts of duty, certainly until the danger becomes more imminent.

Italy Charged With Bluffing

The impression is growing among key oil men, rumors and the Rome-Berlin Axis notwithstanding, that Italy is merely rattling the saber on the Mediterranean. Commitments existing between Turkey and the Allies and the location of 750,000 well-trained troops in the Near East supporting a concentration of British and French sea power in the eastern Mediterranean would leave Italy at war practically shut off from petroleum supplies. With Italy actively fighting on the German side her flow of petroleum from the Western Hemisphere would be extremely precarious and it would be necessary to smash the Allied navy force in the eastern Mediterranean and subdue the land force of 750,000 troops to gain access to the near eastern fields in Egypt, Iraq, and Iran.

Italy consumes approximately 22,000,000 bbl. of petroleum in peacetime and its domestic supply consists of approximately 1,000,000 bbl. annually of inferior crude from Albania. Many think that the tight squeeze placed on Italian operations in Ethiopia because of unwilling cooperation from the petroleum suppliers is too fresh in the minds of government officials to risk direct aid to Germany.

While admitting that their attitude on Italy is merely speculation, international oil-company executives consider the country in a much less favorable location so far as petroleum reserves and supplies are concerned than Germany.

It was learned last week that oil tankers continue to move through the Mediterranean, which permits the Allies to draw petroleum from Iraq and Iran without resorting to sailing around the Cape of Good Hope. Consequently, the probability is still open that France and Great Britain will turn almost immediately to North and South America for their petroleum supplies, if Italy enters the war.

Under present conditions the Allies are drawing in excess of 200,000 bbl. of petroleum daily from the Near East. The supply moving to France and Great Britain from Iraq, Iran, and Egypt may even exceed this figure and doubtless does if the 35,000 to 40,000 bbl. daily from Rumania is included.

Most of Europe's Refineries Are in War Areas . . .

The principal refining centers of the warring nations, and of Italy, another possible belligerent. The accompanying table gives data on refinery operations by countries

THE accompanying map shows the location of 73 European refineries with a rated crude-oil capacity of 437,845 bbl. daily. The table lists the plants at each location with their capacities in American barrels daily. A number of small and unimportant plants located principally in Germany are not shown. In most cases these small German refineries are finishing plants operated with distillates obtained from other refineries.

As shown in the map, most of western Europe's refining capacity is located within a short distance of the active oil area. Some of these plants in this area have been shut down, but so far as known there has been no widespread destruction of refinery properties.

Capacity in U. S. barrels daily.

Key to Map of Refineries

UNITED KINGDOM

Location and company—	Crude cap.	Crack. cap.
A. Clyde Area (Glasgow)		
Ardrossan: Shell Refineries, Ltd.	5,000	1,500
B. Forth Area (Edinburgh)		
Grangemouth: Scottish Oils, Ltd. (Anglo-Iranian)	15,000	4,000
Uphall: Scottish Oils, Ltd. (Anglo-Iranian)	2,500	500
Total	17,500	4,500
C. Mersey Area (Liverpool & Manchester)		
Port Ellesmere:		
Anglo-American Oil Co. (S. O.)	500	.....
Lobitos Oilfields, Ltd.	4,000	.....
Trafford Park: Manchester Oil Refinery, Ltd.	2,000	.....
Weaste: Berry, Wiggins & Co., Ltd.	1,500	.....
Total	8,000	.....
D. Humber Area (Hull)		
East Halton: Herbert Green & Co., Ltd.	1,500	.....
Hull: Major & Co., Ltd.	1,250	.....
Total	2,750	.....
E. South Wales (Swansea)		
Llandarcy: National Oil Refineries, Ltd. (Anglo-Iranian)	22,000	3,500
F. Thames Area (London)		
Canvey Island: London & Coastal Oil Wharves, Ltd.	1,500	.....
Coryton: Cory Brothers & Co., Ltd.	5,000	2,000
Isle of Grain: Medway Oil & Storage Co., Ltd.	3,500	2,000
Kingsnorth: Berry, Wiggins & Co., Ltd.	2,500	.....
Shell Haven: Shell Refineries, Ltd.	15,000	.....
Thames Haven: London & Thames Haven Oil Wharves, Ltd.	18,000	.....
Total	45,500	4,000
G. Isle of Wight Area (Southampton and Portsmouth)		
Fawley: A.G.W.I. Petroleum Corp., Ltd.	12,000	7,000
Total United Kingdom	112,750	20,500

IRELAND

Dublin: Irish National Refineries, Ltd.	10,000	.....
Other	600	.....
Total Ireland	10,600	

FRANCE

A. Flanders (Lille)		
Courchelettes: Soc. de Raffinage des Huiles de Petrole (Anglo-Iranian)	5,000	2,000
Dunkirk: Raffinerie de Petrole du Nord	10,000	2,000
Total	15,000	4,000
B. Seine Area (Paris, Rouen)		
Gonfreville: Cie. Francaise de Raffinage	36,000	8,800
Gravenchon: Raffineries de la Vacuum Oil Co.	6,000	2,300
Port Jerome:		
Raffineries de la Vacuum Oil Co.	6,500	2,300
Standard Francaise des Petroles	24,000	12,000
Rouen: S.A. des Petroles Jupiter (Shell)	15,000	7,000
Total	87,500	32,400
C. Brittany (Brest)		
Brest: Brest Port Petrolier	2,000	.....
D. Loire Area (Nantes)		
Donges:		
Les Propetrol Consommateurs de Petrole	3,500	.....
Pechelbronn Ouest, S.A.	5,000	.....
Total	8,500	.....
E. Alsace (Strasbourg)		
Merkweiler Pechelbronn: Pechelbronn S.A. d'Exploitations Miniere	2,500	1,000
F. Central France (Lyons)		
Autun: Soc. Lyonnaise de Schistes Bitumineues (Shale)	750	400
G. Garonne Area (Bordeaux)		
Bordeaux: Soc. des Raffineries de Petrole de la Gironde (Texas Co., etc.)	6,300	5,000
Pauillac: S.A. des Petroles Jupiter (Shell)	10,000	7,000
Total	16,300	12,000
H. Mediterranean Area (Marseilles)		
Berre: Cie. des Produits Chimiques et Raffineries de Berre	10,000	5,500
Frontignan-Cette: Cie. Industrielle des Petroles	5,000	3,200
L'Avera: Soc. de Raffinage des Huiles	8,000	3,000
Martigues: Cie. Francaise de Raffinage	20,000	5,900
Total	43,000	17,600
Total France	175,550	67,400

DENMARK

Copenhagen: Dansk Mineraloliefabrik	500	.....

NETHERLANDS

Rotterdam: N.V. de Bataafsche Maatschappij (Royal Dutch)	15,000	12,500

BELGIUM

Antwerp:		
Raffinerie Belge des Petroles	3,800	1,000
Raff. et Distilleries Anversoises	2,000	
Redeventza S.A. Belge	3,000	1,000
Langerbrugge:		
Cie. Industrielle Atlas, S.A.	1,500	.....
Belgian Cracking Co., S.A.	500	300
Terdonck: Belgo Petroleum Co.	1,200	1,000
Other	175	.....
Total Belgium	12,175	3,300

NORWAY

Vallo: A/S Norsk Amerikansk Mineroloiliecompagni	1,200	.....

GERMANY

A. Elbe-Weser Area (Hamburg-Bremen)		
Bremen: Deutsche Vacuum Oel, A.G.	500	.....
Hamburg:		
Deutsche Petroleum, A.G.	1,200	.....
Rhenania-Ossag Mineralwerke, A.G. (Royal Dutch)	2,000	.....
Harburg:		
Ebano Asphaltwerke, A.G.	8,000	.....
Rhenania-Ossag Mineralwerke, A.G. (Royal Dutch)	5,000	.....
Rhenania-Ossag Mineralwerke, A.G. (Royal Dutch)	1,200	.....
Ostermoor: Mineraloel und Asphaltwerke, A.G.	2,500	.....
Petroleumhafen: NITAG Internationale Tiefbohr, A.G.	8,000	2,500
Total	28,400	2,500
B. Rhine Area (Dusseldorf, Essen)		
Dusseldorf: Rhenania-Ossag Mineralwerke (Royal Dutch)	1,200	.....
Emmerich: Deutsche Gasolin, A.G.	1,200	.....
Holten: Zeller & Gmelin	2,000	820
Total	4,400	820
C. Hannover		
Lichtenberg: Mineraloelwerke Lichtenberg, G.m.b.H.	1,000	250
Misburg: Deutsche Erdoel Raffinerie, A.G.	5,000	2,500
Total	6,000	2,750
D. Danube Area (Vienna, Munich, Prague)		
Bratislava: Apollo Mineraloel Raffinerie, A.G.	1,800	1,100
Floridsdorfer: A.G. der Shell-Floridsdorfer Mineraloilfabrik	2,000	750
Kagran: Vacuum Oil Co., A.G.	1,500	.....
Korneuburg: Creditul Minier Oest-Rumanisch	2,400	.....
Monheim: Rhenania-Ossag Mineralwerke, A.G. (Royal Dutch)	2,000	.....
Pardubice: Fantowerke, A.G.	4,000	.....
Total	13,900	1,850
Other	16,070	.....
Total Germany	68,770	7,920

ITALY

A. Adriatic Area (Venice, Trieste)		
Porto S. Margherita: Distillazioni Ital. Combustibili, S.A.	5,000	3,500
Trieste:		
Aquila S.A. Tecnico-Industriale	5,000	.....
Standard Soc. Italo-Americana	2,500	.....
Venice: AGIP	6,000	3,100
Total	18,500	6,600
B. Northwest (Milan, Turin, Florence)		
Fornova: Soc. Petrolifera Italiana	1,000	.....
Livorno: Azienda Nat. Idrogenazione Combustibili	4,400	2,000
Spezia: Soc. per Industria Italiana del Petrolio	5,000	4,000
Total	10,400	6,000
Other	12,400	2,000
Total Italy	41,300	14,600

SPARKS . . . FROM THE NEWS

CURTAIN: Once again an International Petroleum Exposition has come to an end. The 1940 show was pronounced a success by one and all, and plans provide for further expansion for 1942.

OMINOUS: Belatedly, the refining industry is casting a jaundiced eye at the octane race in which it has been so industriously engaged. It is discovering that neither the industry nor the customer is benefiting.

SKEPTICAL: The Texas Railroad Commission again promises to reduce that state's crude production with lower June allowables. Skeptics with a background of what has happened over the past 3 months will be inclined to laugh until the reductions actually materialize.

TREND OF THE TIMES: The A.P.I. has decided to drop its expanded public-relations program fearing it will influence employes favorably in violation of National Labor Relations Act.

DIFFICULTIES: With the production of Salem field—the principal pool—50,000 bbl. daily under its peak, Illinois is having difficulty maintaining its production despite the flush output in Centralia area.

THE ANSWER: The week's reports show that drillers in all parts of the country are finding new fields and extending the old—thus answering current inquiries as to adequate oil supplies for national defense.

WELL SPACING: Oil men attending the A.P.I. meeting in Fort Worth this week were told that optimum spacing of wells can lower investments 75 per cent on some reservoirs. This is language that operators understand.

START: Following a year's intensive seismographic exploration, drilling is scheduled to start shortly on a test in northeastern Ohio by a major company. Mahoning County will be the site of the test, contracted depth of which is 5,100 ft.

NO LETUP: Despite the fact that most of official Washington is preoccupied with the new national-defense program, plans for antitrust enforcement and business regulation are proceeding apace. Slated for summer is a suit against the oil industry.

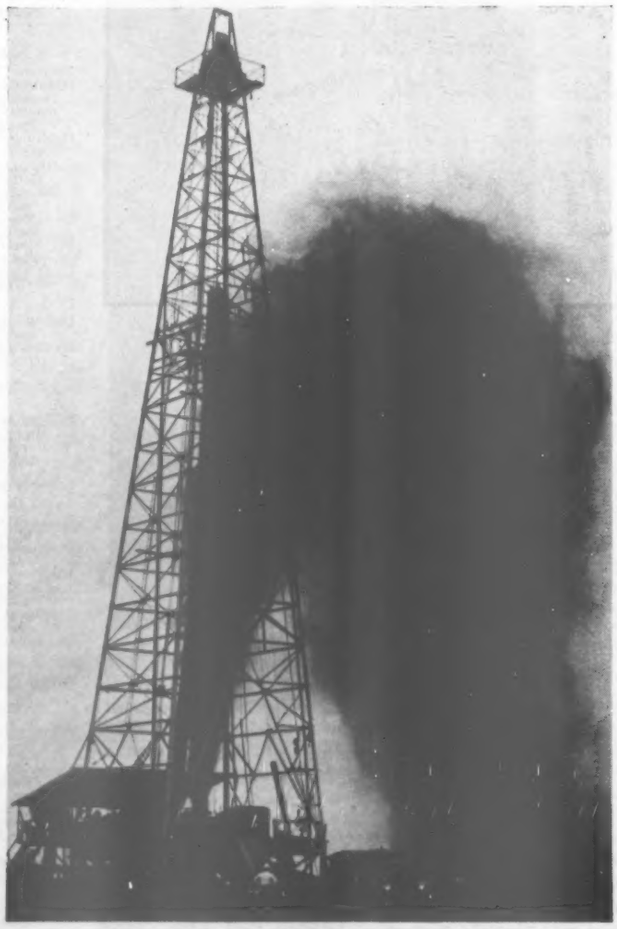
SELF-PROTECTION: Maximum prices set in heating-oil contracts for next winter offered by refiners and marketers to the eastern trade are about a half cent higher than those in the season just closed. An indication that refiners mean to be ready for another record-breaking demand.

AFTERMATH: Following the recent Supreme Court decision in the Madison case, it was predicted that the gasoline-price structure in California, stabilized through intelligent cooperative endeavor, would crash. This week the crash came.

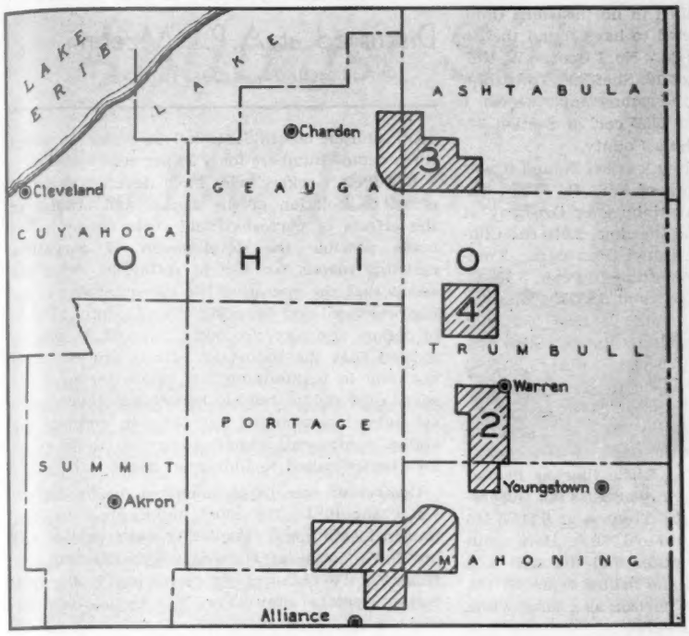
IN REVERSE: Last year the demand for Pennsylvania Grade lubricants exceeded the supply and prices for crude and products advanced steadily. Last week's crude-price reduction shows what happens when conditions are reversed.

VULNERABLE: The Allies' plea for 30 days more time before despairing is believed based on the assumption that Germany's petroleum reserves will be exhausted by then. Blitzkriegs, while devastating to the enemy, are also devastating to oil supplies. Big bombers and 80-ton tanks have enormous appetites.

NEW FIELD FOR THE GULF COAST . . .



Stanolind Oil & Gas Co.'s No. 1 J. A. Hulen, Galveston County, Texas, blowing wild at the estimated rate of 550 bbl. per hour to open a new pool for the Texas Gulf Coast district. The well for a short time was out of control, spraying oil over the adjoining area



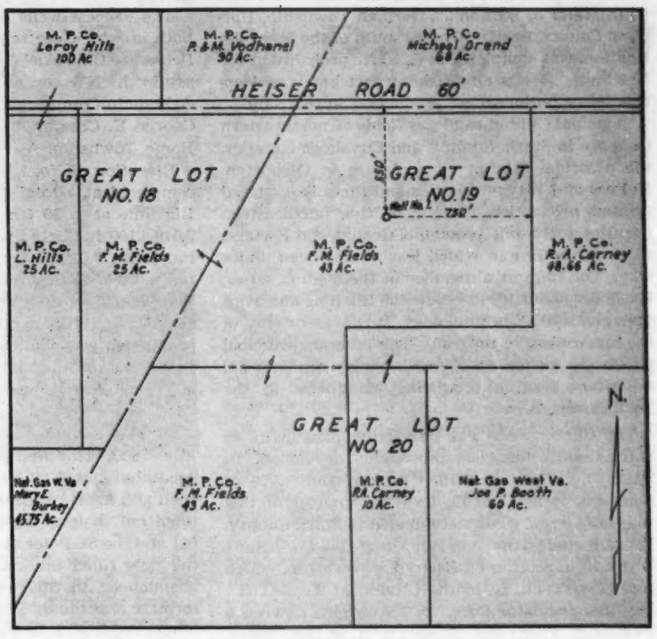

M. P. Co. Leroy Hills 100 Ac.
M. P. Co. P. & M. Vodhanel 50 Ac.
M. P. Co. Michael Orend 68 Ac.
HEISER ROAD 60'
GREAT LOT NO. 18
GREAT LOT NO. 19
550'
730'
M. P. Co. L. Hills 25 Ac.
M. P. Co. F. M. Fields 25 Ac.
M. P. Co. F. M. Fields 43 Ac.
M. P. Co. R. A. Carney 48.66 Ac.
N.
GREAT LOT NO. 20
Nat. Gas W. Va. Mary E. Burkey 45.75 Ac.
M. P. Co. F. M. Fields 43 Ac.
M. P. Co. R. A. Carney 10 Ac.
Nat. Gas West Va. Joe P. Booth 60 Ac.

Fig. 1 (Left)—Shaded areas indicate locations of leasing activities. An estimated 125,000 acres in northeastern Ohio are now under lease. Fig. 2 (Right)—Magnolia has more than 450 acres immediately surrounding the location of the Magnolia well, which will be drilled with cable tools

Northeastern Ohio Location Follows Intensive Survey

By J. P. O'DONNELL

YOUNGSTOWN, Ohio, May 27.—The first location to be staked in northeastern Ohio by a major oil company since the beginning of an intensive seismographic exploration of the area a year ago was announced last week by Magnolia Petroleum Co. This company will drill in the west half of Lot 19, Tract 2, near Berlin Center, Berlin Township (Township 1n-5w), Mahoning County. The location is 550 ft. south and 750 ft. west of the northeast corner of the property. The contractor is E. M. Shields of Butler, Pa., and the contracted depth is 5,100 ft. or through the Clinton sand.

Leasing in this area began early last year and at present an estimated 125,000 acres are now under lease in northeastern Ohio as indicated by the shaded areas on the accompanying map (Fig. 1). The heavy leasing had been limited to five counties: Ashtabula, Geauga, Trumbull, Mahoning, and Portage. The major lessors are Magnolia Petroleum Co., Sun Oil Co., East Ohio Gas Co., Natural Gas Co. of West Virginia, Benedum & Trees, and two independent operators, S. J. Brendel of Pittsburgh, Pa., and James A. Burhans of Tulsa.

East Ohio Gas Co. and James A. Burhans have acreage in all four blocks shown on the map. Magnolia and S. J. Brendel have acreage in Blocks 1, 2 and 3); Sun Oil Co. in Block 4, and Natural Gas Co. of West Virginia in Block 1. Principal Benedum & Trees holdings are in Geauga County. So far, it is reported, Carter Oil Co. has taken no leases in its own name.

Four seismograph crews are reported to be operating in northeastern Ohio and adjacent Pennsylvania areas at present. Carter Oil Co. is operating one out of Warren, Ohio; Magnolia Petroleum Co., one out of Warren; Texas Co., reportedly one out of Cadiz, Ohio; and Seismograph Service Corp., reportedly one out of Meadville, Pa., for Gulf Oil Corp. In addition, Magnolia Petroleum Co. is operating a gravimeter crew in the area.

Activity in northeastern Ohio was inaugurated last spring by Magnolia when its representatives in the area began taking leaseholds. In June that company sent seismograph and gravimeter crews into the area and they have been operating there since. Leasing reached its peak in August 1939, with Magnolia securing the bulk of the acreage followed by East Ohio Gas Co. and others. Later, Sun Oil Co., which has drilled several St. Peter sand wells in Greene County, southwestern Ohio, with minor success, entered the area and took up a large area in Block 4.

Will Use Cable Tools

The Magnolia well will be drilled with cable tools Including the farm on which it is located, the plat (Fig. 2) shows Magnolia to have more than 450 acres immediately surrounding the location. Nearest of the other interests is the Natural Gas Co. of West Virginia, which has two nearby leases, one of 60 acres, the northwest corner of which is 200 ft. east and 750 ft. south of the well location, and the other of 45.75 acres, the northeast corner of which is 1,400 ft. west and 1,150 ft. south of the location.

Representatives of various companies interested in the area at present include:

Magnolia Petroleum Co., Linn M. Farish, geology; John T. Jones, land and lease, Youngstown, Ohio.

Carter Oil Co., Rolf Englemen, Warren, Ohio.

Sun Oil Co., George D. Lindberg, geology, Toledo; Ross Fugate, Warren; E. W. Morgan, Wooster, Ohio.

Sinclair Prairie Oil Co., J. J. Russell, Jr., geology, Warren, Ohio.

East Ohio Gas Co., L. T. Evans, Warren, Ohio.

There has been intermittent wildcatting in northeastern Ohio for many years, but the only pools of consequence in that immediate area are a Berea sand oil pool (Homeworth) in Knox Township, Columbiana County, and a Clinton sand gas field in Stark and Summit counties, north and west of the city of Canton. Minor Oriskany sand gas production has been found in Columbiana County and there are several small Oriskany or Austinburg sand gas-producing areas in Ashtabula County. The latter are well north of Block 3.

Of comparatively recent development is the Newburg sand gas field of Benedum & Trees near the villages of Mayfield and Highland Heights, Guyahoga County, approximately 35 miles west of the scene of the heavy leasing. This small pool was pretty well developed in 1939 with the drilling of a score of wells ranging in open-flow volume from 100,000 cu. ft. per day to 6,000,000 cu. ft. and averaging 2,000,000 cu. ft. Depth of these wells ranged from 2,800 to 2,929 ft. and averaged 2,841 ft.

Oriskany sand gas production was encountered by the Natural Gas Co. of West Virginia's No. 1 Jenkins in the SE cor. of Section 20, Madison Township, Columbiana County. This well, completed May 11, 1935, had an initial production of 2,000,000

cu. ft. at a total depth of 4,570 ft., 27 ft. in the Oriskany, which is well above the announced objective of the Magnolia well. Columbian Carbon's No. 1 G. D. Miller in Section 23, German Township, Harrison County, nearly 50 miles south of the Magnolia location, was completed at 5,250 ft., probably in the Newburg. It was an Oriskany test but was deepened after failing to get production in that sand.

Principal Clinton sand gas fields of northeastern Ohio are in Stark, Summit and Cuyahoga counties, the principal Clinton oil pools are in Coshocton, Holmes and Wayne counties and there is scattered Clinton production in four or five northeastern counties, including Ashtabula, Geauga and Portage, three of the five in which leasing has been under way. The Clinton, a member of the Medina series, is usually about 100 ft. below the Big lime and averages about 30 ft. in thickness. It is present only in the eastern half of the state. The Trenton, principal producing formation of northwestern Ohio, is unimportant from a producing standpoint in the northeastern area.

The Clinton sand gas field lying principally in Stark County has been thoroughly developed. In 1932, 80 wells were drilled in this county, 76 of them gas wells. During the first quarter of this year only a few wells were drilled in Stark County. These included the Dun-Mar Oil & Gas Co.'s No. 1 J. H. Gill in Section 11, Lawrence Township, which got 1,250,000 cu. ft. in the Clinton at 4,016-41 ft.; the Ohio Insulator Co.'s No. 1 Albright, Lawrence Township, which got 630,000 cu. ft. in the Clinton at 3,947-63 ft. and the C. W. White Co.'s No. 1 Jacob Hyler in Section 34, Lake Township, which got 100,000 cu. ft. in the Clinton at 4,540-64 ft.

The St. Peter has produced oil at several points in Ohio and Kentucky. It is near the base of the Ordovician and is normally found about 2,300 ft. below the base of the Big lime and 60 ft. below the top of the Trenton. In wells drilled in the vicinity of Newark, Licking County, it was 2,000 ft. below the base of the Clinton, while in two Ashtabula County tests it was 2,500 ft. below the base of the Clinton. There is considerable controversy over the St. Peter in Ohio. It has been variously reported as a sand and as a dolomite. Because of the depth below the top of the Trenton in one well, it has been reported as the St. Peter sand, but a geologist's report, based on sample studies, considered it to be the upper part of the lower Magnesian group.

The deepest wells drilled in northeastern Ohio, both of which are reported to have found the St. Peter, are Ohio Fuel Gas Co.'s No. 1 George W. Kelsey in the NW cor. of Lot 19, Sheffield Township, Ashtabula County, and the same company's No. 1 George E. Chester in the NW cor. of Section 34, Rome Township, Ashtabula County.

Elevation of No. 1 Kelsey was 847 ft. and it was completed at a total depth of 5,582 ft. It got the Big lime at 1,730 ft.; Austinburg or Oriskany at 2,019-3,100 ft.; base of the Big lime, 2,910 ft.; Clinton stray, 3,012-17 ft.; Clinton, 3,022-95 ft.; Trenton, 4,932-5,575 ft.; and top of the St. Peter, 5,575 ft. The hole filled up with water at 5,852 ft. and was abandoned at that depth on May 23, 1930. The only production was obtained in the Clinton, which was shot from 3,071 to 3,091 ft. The well made 1,900,000 cu. ft. after shot, but dropped to 67,000 cu. ft. in 12 hours.

Surface elevation of No. 1 George E. Chester was 878 ft. This well got the Big lime at 1,880 ft.; Austinburg at 2,140-49 ft.; Little lime or Packer shell at 3,333 ft.; Clinton stray at 3,373 ft.; Queenstown red shale at 3,550 ft.; Trenton at 5,315-5,946 ft.; and the St. Peter at 5,946 to 6,004 ft. Here again the hole filled up with water and the well was abandoned. In this well the driller reported the formation at the St. Peter horizon as a sand, while others reported it as a dolomite.

Some production was reported from what was regarded as the St. Peter in a number of wells in Newark Township, Licking County, in Central Ohio in 1924-25. These wells encountered a pay ranging from 625 to 682 ft. below the top of the Trenton and this interval led to the conclusion that it was the St. Peter. While some of the wells were dry, others got production ranging from a light show to 75 bbl. per day. One that had a production of 50 bbl. per day and 100,000 cu. ft. of gas got the Big lime at 1,472 ft.; Clinton at 2,353 ft.; Trenton at 3,688 ft.; and St. Peter, 4,360 ft. It was completed at 4,375 ft. The pay in another well, elevation (from topographic sheet) 870 ft., was encountered at 4,354-64 ft., with the top of the Trenton at 3,696 ft.

Well Spacing and Octane Race Discussed at A.P.I. Meeting

(Continued from Page 9)

cent solution of ethyl alcohol in water to about three octane numbers for a 50 per cent solution.

Research workers who have devoted years of effort to isolation of the causes and studies of the effects of corrosion said their research has made possible the development of corrosion-resisting metals for use in refineries, with the result that the operating life of equipment is being prolonged and the costs, running into millions of dollars annually, are being reduced. It was indicated that the industry's efforts are resulting not only in maintaining low prices for products sold to the public, but are benefiting other chemical industries troubled by corrosion and are enabling equipment manufacturers to develop alloys better suited to industrial needs.

Control of the displacement of oil by gas or water should be the most important consideration in locating and completing wells, it was said by T. V. Moore, of Humble Oil & Refining Co., Houston. To obtain high oil recovery, he said, certain factors subject to control must be observed. These were reported to include a sufficiently low rate of production to permit use of water rather than gas drive; a velocity of the displacing fluid slow enough to permit the capillary and gravitational forces to maintain a substantially uniform rate of displacement through all oil-bearing sands; and the gas and water to be conserved, in some cases a portion of them being returned to the reservoir. Producing one zone at a time was recommended in the case of multiple zones of oil-bearing sand, with producing operations carried on in such a manner as to keep the recoverable oil concentrated in as small a part of the sand as possible.

Difficulties operators are encountering because of paraffin accumulation are as severe as 10 years ago, with some progress in removing the waxy substances but little in preventing their formation, said William Y. Brown, of Carter Oil Co., St. Elmo, Ill. Scraping tools were being used to relieve the tubing of flowing wells, commercial solvents and softeners in pumping wells, purging and flushing with steam in flow lines, and cleaning processes in stock tanks. Citing cases of stripper wells threatened with the necessity of abandonment because of accumulations, he said that in eastern fields hot water, steam, gasoline, and solvents commonly are employed successfully, while heat generators and penetrating softeners are used on the West Coast in dealing with the problem.

PAPERS AND ABSTRACTS

Three full-length papers presented at the Fort Worth A.P.I. meeting are published elsewhere in this issue. These are:

"Application of Superheated Steam to Combination-Unit Prime Movers," by A. E. Harnsberger, Page 35.

"Effect of Formation Permeability on Plastering Behavior of Mud Fluids," by H. T. Byck, Page 50.

"Cathodic Protection of Condensers and Cookers Utilizing Brackish Bay Water," by W. A. S. Wright and J. H. Brooks, Page 60.

Abstracts of all the remaining papers are published beginning on Page 54.

NORTHEASTERN OHIO GEOLOGICAL SOCIETY OUTING . . .

Group photo taken at the spring outing and golf tournament sponsored by the Northeastern Ohio Geological Society and held at the Mayfair Country Club, near Akron, Ohio. (Back row)—D. R. Dobyns, J. J. Russell, Jr., E. R. Rice, Don Flanders, E. F. Winter, Ray Janke, Linn Farish, Earl Cypert, John Foo Jones, L. F. Saunders, and Ty Hartley; (front row) Bill Corban, Harry Imle, Sam Stuart, Mrs. Opie Dimmick, Mrs. E. W. Hollands, E. W. Hollands, Cliff Haynes, Smiley Raborn, Opie Dimmick, Woody Waggoner, and Ed Dunbar. The officers of the society are: Linn M. Farish, president, Magnolia Petroleum Co.; Rolf Engleman, vice president, Carter Oil Co.; D. R. Dobyns, secretary, Magnolia Petroleum Co.; J. J. Russell, Jr., treasurer, Sinclair Prairie Oil Co.

Antitrust Suit Being Prepared By Justice Department

By HENRY D. RALPH

WASHINGTON, D. C., May 27.—The new national-defense program may force some changes in government policy but is apparently having no effect on antitrust enforcement and regulation of business.

The Department of Justice is going ahead full steam with plans to bring a number of nation-wide antitrust suits this summer, particularly one against major oil companies on charges of restraining competition in petroleum marketing by various means.

Just what form the new oil suit will take and when and where it will be brought are matters still under discussion, but officials of the Department of Justice say it is a safe bet the suit will be ready for filing within the next 3 or 4 weeks at the most. Various attorneys of the antitrust division have drawn up outlines for different types of procedure against the oil industry but Attorney General Jackson and Assistant Attorney General Arnold have not yet definitely decided just how to begin the attack. Proposals include suits aimed at "the cracking-patent pool," divorcement of marketing facilities, divorcement of pipe lines, fixing of jobber margins, stabilization of prices by purchasing gasoline from independent refiners, and possibly other aspects of the operations of major oil companies.

This much is certain: when the new oil suit is filed it will be sweeping in scope and national in coverage and will be one of the biggest cases in antitrust history. In its two Madison cases, the West Coast investigation, the East Coast investigation, and the Ethyl Gasoline case, the Department of Justice has concluded it is not sufficient to attack what it considers the monopoly problem in the oil industry on a regional or piecemeal basis. Therefore the new suit will be very broad and almost certainly will demand breaking up the major integrated companies in some way. A probable precedent is the pending motion-picture divorcement suit in which the Government is attempting to get the leading motion-picture producers out of the film-distribution and theater business.

ANTITRUST officials contend the approximately 20 fully integrated major companies have such a controlling influence in the oil industry that they can and do influence prices and the extent of competition. In their view, nothing less than disintegration will provide the free competition envisioned by the Sherman Act. Under the Supreme Court's decision in the Madison case almost any sort of business policy or action which has some effect on prices may now be held to be a violation of the antitrust laws, and the department feels it is on firm ground in going ahead with its projected oil suit. Beyond stating that the suit will undoubtedly be filed shortly, that it will be extremely broad, and that it will demand some sort of divorcement, the department officials warn that no forecast may be made at this time as to the exact nature of the case, such as whether it will or will not include the cracking patents, pipe lines, or any other particular aspect of the oil business.

The case will probably be a civil injunction rather than a criminal suit. The department feels that the Madison case brought very little economic relief although it did result in criminal convictions. It has been one of Thurman Arnold's principles that criminal penalties for antitrust enforcement give the public very little relief beyond serving as a warning against similar offenses by others, and that the real benefits of antitrust laws lie in their power to free business from restraints and actually bring about lower prices and greater competition. Also, a criminal case is usually harder to try because of the necessity of strict proof and the technicalities of the rules of evidence. Under a civil suit the court may, through injunction or through consent decree, bring about a wide revision of business structure and practices which would not be possible under a criminal suit, and Mr. Arnold has followed the policy of using civil procedure where this will bring greater economic relief, to use his terminology, than is possible in a criminal suit. The case will not be filed in New York because of the congested docket there but probably will be filed in some federal court in the East which can claim jurisdiction over all the companies to be named.

Meanwhile Thurman Arnold announced the attorney general had authorized an immediate investigation of retail gasoline prices in the District of Columbia following complaints that a meeting of retailers was held May 20 to fix prices and that prices have since been increased 2 cents a gallon.

THAT the defense program will not stand in the way of vigorous antitrust enforcement was made clear last week by both President Roosevelt and Attorney General Jackson. At press conferences they smiled off the suggestion that the antitrust laws might be put on the shelf in order to permit business to cooperate for maximum efficiency in production. Instead, they suggested that greater benefits might come from breaking up monopolistic practices, particularly patent control. An example has already been set in the aviation industry where the Government is obtaining licenses for the production of airplane motors which it intends to relicense to other manufacturers in order to put more plants into production.

President Roosevelt has announced that he plans to set up a coordinating committee to assist the regular government departments in getting maximum production of military equipment, and while this committee will include representatives from a great many groups it will fall short of paralleling the War Industries Board which functioned during the last war, or the machinery worked out some time ago by the Army and Navy in their industrial-mobilization plan.

SUGGESTIONS that the administration may revive the N.R.A. or attempt a similar system of regulating business are current, but there appears to be no definite move in this direction. The way was cleared for such business regulation, however, by the decision of the Supreme Court last week upholding the constitutionality of the Bituminous Coal Act. In this decision the court held it is within the power of Congress to stabilize an interstate industry through a process of price-fixing which safeguards the public interest by placing price control in the hands of an administrative agency. Under the coal act the bituminous industry is divided into a number of regional code authorities with limited powers to propose minimum and maximum prices and regulation of business practices, but final authority rests in a commission which now operates under the Interior Department.

This bituminous-coal decision establishes a perfect precedent for congressional regulation of other industries, and attorneys believe it could easily be made the basis for legislation regulating the petroleum industry from production to filling stations. First, however, Congress will have to be convinced by the Interior Department or other administrative agency that there is need for such federal legislation. The decision fits in very nicely with the Madison oil decision, to which it makes frequent reference, by pointing out that an industry may not attempt to stabilize its markets through its own initiative but that if Congress feels that unrestrained competition is not desirable the federal Government may undertake whatever stabilization is considered proper. This decision may bolster the claims for constitutionality of the Cole oil-regulation bill, but it appears now that the House committee considering this bill will make no serious attempt to get action on it during the present session.

A SAMPLE of the type of action which may be taken by the Government in the name of national defense is an amendment adopted by the House to the bill increasing the Army equipment program. This amendment, offered by Rep. J. Joseph Smith of Connecticut and adopted without debate, authorizes the president to embargo the exportation of almost anything needed for national defense upon his own finding that such an embargo is necessary. If this provision is accepted by the Senate the president will have power to "prohibit or curtail the exportation of any military equipment or munitions, or component parts thereof, or machinery, tools, or material necessary for the manufacture or servicing thereof." This would probably be authority for restricting the exportation of gasoline, since this is a material necessary for the servicing of military equipment. The proposal grew out of a bill reported by the House military affairs committee to license the export of scrap iron, but the amendment to the War Department bill is far more sweeping and apparently would give the president power to enforce the present "moral embargo" on the exportation of equipment for the manufacture of aviation gasoline and other materials and to extend this embargo almost indefinitely.

STATE CAPITALS...

LOUISIANA

THE NEW ADMINISTRATION under Gov. Sam H. Jones has engaged Griffin Hagen & Co. to study state departments and bureaus and formulate a plan whereby consolidation and readjustment of such bodies will promote greater efficiency and cut expenditures. The study as it concerns the Department of Conservation may suggest realignment of the duties and powers of the department. Until the report is made to the legislature and is acted on by that body, the status of the Minerals Leasing Board and other state departments dealing with the oil and gas industry will not be known. This action is expected in June.

In line with the policy of the new state administration, it has been announced that hearings on fields will be held after due notice in open session, and that orders formulated following the presentation of testimony will be written and fully distributed. Also, in cooperation with the U. S. Bureau of Mines and other oil-producing states, the state allowable in Louisiana will be held to limits better conforming to conservation and prevention of waste.

Although legislation supported by the new administration will await the findings of the consultants employed to study the situation, some bills are being presented in the legislature at this time. One was introduced in the house last week prohibiting the leasing of state lands for development of oil, gas, or any other minerals, and vesting in the Department of Conservation the power to develop such properties.

CONFORMING MORE CLOSELY to the U. S. Bureau of Mines estimate, allowables in the State of Louisiana were cut for the month of June to 280,166 bbl. daily, a reduction of 12,914 bbl. from the preceding month's figure. The cut, which affects coastal Louisiana fields more than those in North Louisiana, was made necessary because of the large volume of crude in storage, and is a measure to prevent waste aboveground.

North Louisiana was given 60,897 bbl. daily and coastal Louisiana 219,269 bbl. The cut affects per-well allowables more than the figures would indicate, due to the large number of recent completions, in the coastal section of the state.

TEXAS

NET DAILY ALLOWABLE production in Texas in June, July and August was fixed at 1,335,530 bbl. by the Railroad Commission on May 24. The figure represents a horizontal 15 per cent cut and includes a 1-day state-wide shutdown in each month. The net allowable is lower than the U. S. Bureau of Mines estimate of demand which is 1,344,600 bbl. per day. Producers and buyers were unanimously in favor of lowered production in June, but there was strong objection to extending the figure into July and August.

It was announced that all fields in the state would either be shut down on the first day of each month or reduce their pipe-line runs one-thirtieth to make up for keeping open. The East Texas field will continue to have 14 shutdown days each month, which will cut its basic allowable of 690,000 bbl. a day to 370,000 bbl. in June and about 387,000 bbl. in July and August. The shutdown days will be each Sunday, Wednesday and Saturday and July 4 and August 13.

Commissioner Thompson said no special allowables will be granted under the new proration plan and no change will be made in the figures without first holding a state hearing.

Every proration district in the state, except East Texas, shared in the reduction with West Texas cut the deepest. That district basic schedules were cut 26,271 bbl. from May 1 to 216,447 bbl. North Texas was cut 14,429 bbl. to 111,503 bbl.; Gulf Coast, 12,032 bbl. to 227,682 bbl.; Panhandle, 10,005 bbl. to 64,145 bbl.; East Central Texas, 5,259 bbl. to 82,673 bbl.; West Central Texas, 4,756 bbl. to 51,125 bbl., and Southwest Texas, 4,169 bbl. to 245,386 bbl.

A comparative table of district basic allowables follows:

District—	May 1 basic	June 1 basic
Southwest Texas	249,555	245,386
Gulf Coast	239,714	227,682
East Central	87,932	82,673
East Texas	690,000	691,000
West Central	55,881	51,125
West Texas	242,718	216,447
North Texas	125,932	111,503
Panhandle	74,150	64,145
Total	1,765,882	1,688,961

In North Texas, K.M.A. was cut from 42,337 bbl. to 35,000 bbl., and Walnut Bend from 3,432 bbl. to 1,960 bbl. Large cuts in West Texas were in the Goldsmith, Kermit, Wasson and Yates field, while Hendrick got an increase.

Sulphur Bluff was unchanged, but Talco received a slight raise.

ATTY. GEN. GERALD MANN's ruling on the use of natural gas in the production of oil may prove a serious deterrent in operations of numerous wells in the Texas Gulf Coast.

The law forbids the use of more than 10,000 cu. ft. of gas in lifting a barrel of oil to the surface.

In the Gulf Coast area many wells are of such depth, and require the production of such a large amount of water with the oil, that a method of artificial gas lift has been worked out.

Gas produced from gas wells is sold to the oil producers, who in turn use it for a gas lift by artificial impregnation of the gas into the well.

According to the situation as outlined to the attorney general by John T. Taylor, chief supervisor for the Railroad Commission, the producers of the gas take the position that they sell the gas, not knowing whether in the use of it as a lift more than 10,000 cu. ft. will be used to the barrel.

Users of the gas contend that the penalty against wrongful use of the gas is a penalty against the producer, not against the purchaser.

Mr. Mann overruled the contention of the purchasers.

The use of a maximum of 10,000 cu. ft. per bbl. as a lift is a permission granted by statute, and whoever violates that permission is liable under the law, he asserted.

However, the producer of the gas could not be held liable for the use to which the purchaser put it, unless it were shown that the producer knew of the fact that an unlawful use was to be made of it.

TEXAS ACTED BY INJUNCTION and agreement Thursday, May 23, in the 116th District Court to stop 90 East Texas oil companies from polluting the Neches River system with salt water from East Texas wells.

Temporary restraining orders were granted by Judge John A. Rawlins against 18 of the 90 companies and individuals who did not answer the petition of Atty. Gen. Gerald Mann or appear in court.

Effect of the order was to halt dumping of salt water into the Neches and its tributaries, and unless the 18 companies can find storage pits for the waste they must cease pumping oil, Asst. Atty. Gen. Hugh Q. Buck said.

Fifty defendants signed an agreement with Buck and Asst. Atty. Gen. James Noel, stipulating that they will contribute to the expense of an immediate survey of their properties and leases by engineers who will recommend various systems of disposing of the thousands of barrels of salt water pumped from wells daily. This water has been finding its way into the Neches River, killing fish, ruining it for cattle, seriously damaging Southeast Texas rice fields and endangering the water supplies of coastal cities.

The agreement signed Thursday brought to 100 the number of oil companies that are cooperating with the state in halting pollution of the river system.

Twenty-two other new defendant companies who filed pleas of privilege and other formal answers in the case in seeking to transfer trial to their home counties will be called into court on June 17 for a determination of those issues, Judge Rawlins ruled.

Trial of the application of Attorney General Mann for a permanent injunction on its merits against the 40 new defendants who did not sign the agreement and for any others that do not comply with it was set for July 8 in the 116th District Court.

OKLAHOMA

ALLOWABLE PRODUCTION in Oklahoma in June will remain at 408,100 bbl. unless purchasers petition the Corporation Commission to give them an opportunity to show cause why it should be changed. The U. S. Bureau of Mines estimated the demand from Oklahoma in June will average 408,600 bbl. which is a 500-bbl. increase over the May estimate of the bureau.

CALIFORNIA

THE CENTRAL COMMITTEE of California Oil Producers set the California allowable for June at not to exceed 592,000 bbl. which is the same allowable that prevailed during May. The daily allotment of top producing wells, of which there is expected to be 842 during June, was cut from 174 bbl. to 172 bbl. daily, thus cutting off 1,684 bbl. per day from the anticipated output of next month. In addition to reducing the allotment of wells in the top brackets the committee reduced the power factors for intermediate wells from 7.32 to 7.28, which will reduce production a relatively small amount during June. Crude-oil production at the time of the Central Committee's meeting was approximately the same as last month and the committee considered this a good omen and an indication that most producers were conforming closely to the allowable. There are a few fields, however, that have never conformed to allowables, and there is no indication that they will change their attitude.

ARKANSAS

FOLLOWING THE RENDITION of a majority opinion favoring the consideration of sand thickness in the Schuler, Arkansas pool, the three-judge federal court will take further action this week. Attorneys for both the Lion Oil Refining Co., plaintiff in the suit, and the Arkansas Oil and Gas Commission, defendant, have agreed on findings of fact regarding the case and have mailed copies to the court. After the court has studied these reports, more arguments in the case may be desired before handing down a decision.

The suit invoives the inclusion of a sand-thickness factor in the allocation formula of the Schuler gas-driven Jones sand pool. The Lion Oil Refining Co. brought suit asking that the commission be forced to revise its acre-pound factor now used in the field's allocation.

KANSAS

DRAWDOWN POTENTIAL TESTS will be taken on all wells in the Bloomer Arbuckle pool, Barton, Ellsworth, and Rice counties, beginning June 5.

The procedure for the determination of potentials on pumping or flowing wells by the drawdown method will be by the use of an approved liquid-level measurement device (echometer, depthograph or bottom-hole-pressure gage).

The OIL AND GAS JOURNAL

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On Guard!

Official confirmation has been given to the report that the Department of Justice will shortly institute another oil suit under the antitrust law. It is indicated it will be the most important suit ever filed against this industry and presumably will be of far-reaching significance to business generally.

In the absence of any definite statement it is futile to conjecture what allegations will be made. It is certain there can be no operating developments which have not already been thoroughly ventilated in the several court actions and congressional investigations to which the industry has been subjected during the past 4 years.

These several inquisitions have made the operations of the industry an open book, from the wells to the filling stations. The conclusion must therefore be that the Department of Justice believes the facts disclosed justify this widespread action under the antitrust act as interpreted by the recent majority decision of the Supreme Court in the Madison case.

There cannot help but be strong suspicions in the minds of many that this further persecution is designed primarily to weaken the industry in its opposition to federal control of its operations.

The hint of a way out was given in the Madison case decision, when the majority opinion in holding the industry guilty of price fixing intimated the alternative was enactment of a law by Congress establishing a government authority for fixing prices.

This was further exemplified last week in the majority opinion upholding the legality of the Bituminous Coal Act, a clear case of government control of a major industry. The court in this case upheld the act because price fixing was in the hands of a congressionally authorized agency.

In other words, what it was declared illegal to do by voluntary action involving a small fraction of an industry received legal approbation when authorized by act of Congress.

The industry's position in this exigency should be made clear to everyone concerned.

If voluntary action as represented in the Madison case is illegal, let it stand at that, but under no condition accept a governmental compromise which will bring about legal approval of federal control of the industry.

This situation is particularly important right now when war preparation may be used as a further excuse for governmental intervention.

Leaders of the industry have been and will continue to be called to discuss petroleum's contribution in preparedness for the national defense. Fortunately, there are those in the military services who have made investigations and appreciate the fact that the industry is fully prepared to carry out whatever it may be called upon to do for the defense of the country.

Governmental interference will be a handicap and not an aid in any extension of the industry's service. Federal control and announced plans to divorce part of the industry's operations will destroy its efficiency in serving the nation most effectively.

The industry's leaders should be alert to this situation. It should not permit itself to be placed in a defensive position, or be misled by any threat of fresh prosecution or by the wiles of governmental Greeks bearing gifts in the form of special legislation designed to drive a wedge in the solid front opposing federal interference or control of any phase of its operations.

Rather, as the president said in his Sunday night fireside chat, we should "continue our efforts to bring the blessings of a free society, of a free and productive economic system, to every family in the land."

Oil Possibilities of South Dakota Still Unknown

By E. P. ROTHROCK
State Geologist of South Dakota

SOUTH Dakota has been the scene of desultory oil prospecting ever since the early days of the oil business when a heavy, greasy oil was struck in shallow wells in the northern Black Hills, pumped with windmills, and sold for lubricating heavy mining machinery in the gold mines and mills about Deadwood. Shows of oil in widely scattered wells and small quantities of gas have kept interest alive, though none of them was sufficiently important to inaugurate a systematic program of prospecting.

In the southern Black Hills a well near Edgemont, the Red Canyon well, showed a considerable seepage of oil but its potential production was never tested. On the Barker structure, also in the southern end of the Black Hills, in the extreme northwestern corner of Fall River County, a 10-bbl. well aroused considerable hopes at one time. Near the state line, directly west of Belle Fourche at the northern edge of the Black Hills, a well, known as the Blanch Hamilton well, also gave a show of oil. These shows, combined with the fact that profitable oil fields have been discovered only a short distance to the west in Wyoming, and a considerable gas field developed at Baker, Montana, have kept interest alive in western South Dakota.

Along the Missouri River there have been legends of shows of oil since the early days of settlement. Most of these shows occurred on water from artesian wells. Larger shows were reported in an oil test in Stanley County 25 miles northwest of the city of Pierre, which was known as the Standing Butte well. Some oil was bailed from this well but none was ever pumped.

For more than 40 years gas has been produced in small quantities along with artesian water from the Dakota sandstone in this region. These wells lie in a belt roughly paralleling the Missouri River, extending from southern Stanley County nearly to the North Dakota lime.

None of the shows mentioned is important in itself, but they indicate that petroleum-bearing rocks do underlie the state and under proper conditions could furnish the materials for an oil pool.

Recent development in the techniques of prospecting and deep drilling, however, have again brought South Dakota to the attention of the oil industry as a possible prospecting area. The purpose of this article, therefore, is to set forth some of the geologic features of the state which might be of interest in the development of this region.

Stratigraphy

A sedimentary section ranging from the Cambrian to the upper Cretaceous system is available to the prospector in South Dakota. These formations contain a number of possible source and reservoir rocks. In fact, nearly all the oil-bearing horizons of Wyoming and eastern Montana are represented in the state.

Cambrian rocks can be found outcropping in the Black Hills and probably underlie a small area north and east of these mountains though very little is known of their distribution. Ordovician limestones and shales outcrop in the northern Black Hills and are thought to have a similar distribution. Carboniferous formations, however, including the thick limestones known as the Englewood and Pahasapa formations and the Pennsylvania shales, sandstones and limestones of the Minnelusa formation have been traced from the outcrops in the Black Hills eastward nearly to the Missouri River, and probably will be found to thin out somewhere between the Missouri and James valleys.

The Mesozoic section, including representatives from the Triassic through the upper Cretaceous systems underlies most of the state. This section includes the Spearfish redbeds (Triassic) corresponding to the Chugwater beds of Wyoming, and the Morrison and Sundance formations (Jurassic) which have given some shows of oil in the Black Hills outcrops. It also includes upper Cretaceous formations, the Lakota-Dakota sand group, the Graneros formation, with the Newcastle or Big Muddy sand, so productive in Wyoming, the limy Greenhorn, and the Carlile formation which carries the Wall Creek sands very similar in character to the Wall Creek sands in the producing fields of Wyoming. The Niobrara chalk though much thinner than in Kansas is well represented across the southern end of the state and has given some gas shows locally. The Pierre formation which outcrops over most of the state carries at least one horizon of oil shale.

The maximum thickness of the sedimentary section occurs at the western edge of the state where some 8,000 ft. of sediments lie above the pre-Cambrian. To the east the section thins as it approaches the outcrops of the pre-Cambrian on the Sioux ridge and in northeastern corner of the state. One hundred miles east of the Wyoming line 5,000 ft. of sediments were penetrated by a well ending in the Carboniferous limestone and 70 miles still farther east, 3,500 ft. were penetrated to about the same horizon. At Iroquois, in the James Valley, 1,060 ft. were penetrated before the "granite" of the pre-Cambrian was struck. This thinning is due in part to the thinning of the individual formations and in part to the overlapping of older beds by the younger.

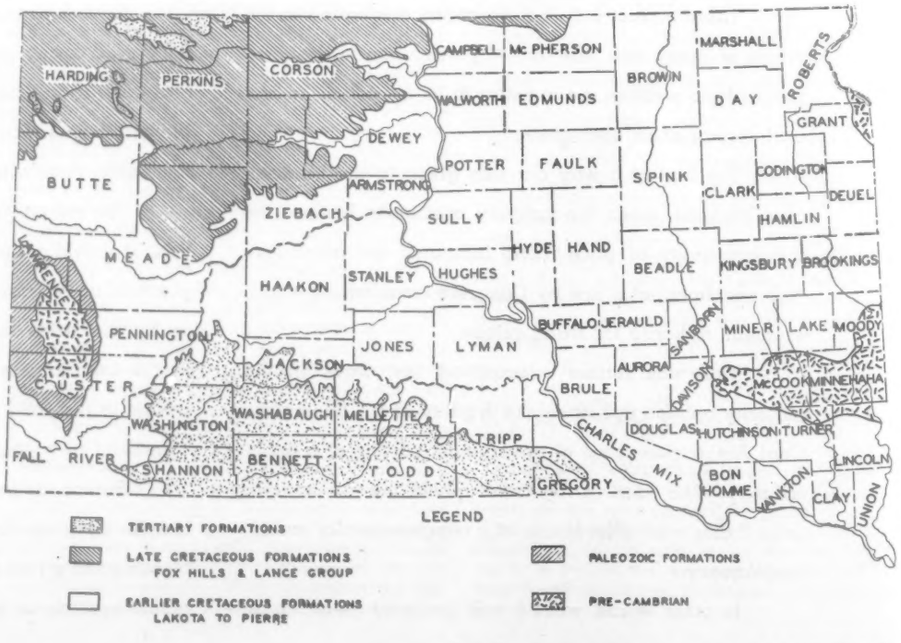
Paleozoic rocks have been traced as far east as the Missouri River, and a very thin section of them is thought to occur below the Mesozoic rocks in deep wells at Aberdeen in the northern James Valley.

Early Mesozoic rocks have also been traced eastward across the Missouri Valley apparently thinning out somewhere between the Missouri and James valleys. Cretaceous rocks, however, cross the entire state though the individual formations become much thinner in the east than they are in the Black Hills outcrops. These effectively cover the older formations so that they do not outcrop in eastern South Dakota. Our information on their eastern extension has to be gained entirely from well records.

Structure

Structurally, the state is dominated by the Lemmon geosyncline, a great plunging trough, whose axis passes through the cities of Philip and Lemmon; whose western flank is the Black Hills-Cedar Creek fold and whose eastern flank lies on pre-Cambrian outcrops near the eastern boundary of the state. This anticline plunges northward into a large basin in North Dakota, which has been

AREAL GEOLOGY
OF SOUTH DAKOTA



called the Williston basin to distinguish it as a part of the Moose Jaw synclinorium.

The main fold of the Black Hills is not of interest as an oil structure, but the Cedar Creek anticline offers an area worthy of consideration. At the south, this anticline ends in a series of enechelon folds lying in northern Harding County which seem to connect it with the Black Hills in a long line of folding which parallels the Rocky Mountains. These en echelon folds have been of interest as possible places for oil accumulation. The presence of a considerable gas production at Baker, Montana, and a small petroleum production only 15 miles north of the northwest corner of South Dakota offers sufficient ground for hoping that these small folds along the crest of this large anticline may be sites of oil accumulation in South Dakota.

The eastern flank of the geosycline rises abruptly to approximately the location of the Missouri River and then breaks into a broad terrace whose edge trends a little east of north. Slopes of 10 ft. to the mile prevail between the synclinal axis and the top of the terrace. On its top, however, they flatten to 3 or 4 ft. per mile. For more than 40 years sufficient gas has been produced from artesian wells along the front of this terrace to supply large ranch houses and federal Indian schools with fuel and light. They have also yielded a small commercial supply to the cities of Pierre and Ft. Pierre. The following analysis is representative:

GAS SAMPLE TAKEN FROM LACY WELL, SECTION 35, TOWNSHIP 7N, RANGE 28E, STANLEY COUNTY, SOUTH DAKOTA[1]

	Per cent
Carbon dioxide	3.1
Oxygen	0.6
Methane	88.7
Ethane	0.0
Nitrogen and helium by difference	7.6
Total	100.0
Helium content	0.04

1. Analysis made by the Oil and Gas Laboratory, U. S. Bureau of Mines, Amarillo, Tex.

Gas rises with artesian water from the Dakota sand. This water is saline, carrying higher concentrations of salt than does the artesian water in other parts of the state.

Minor folds occur along this terrace, but have not been well mapped. The main obstacle is the difficulty of mapping from surface due to the fact that the thick Pierre formation, which covers most of the state, does not furnish easily recognized key beds. East of the Missouri River the Pierre is covered with glacial drift, leaving the bedrock exposed at very few places. Ordinary methods of surface mapping, therefore, can be carried on only with great difficulty. The outcrops in the breaks of the Missouri Valley and the larger tributaries, however, show that low elongated folds trending parallel to the axis of the geosyncline occur in the shales. In the present stage of development they offer the only indication of drilling sites.

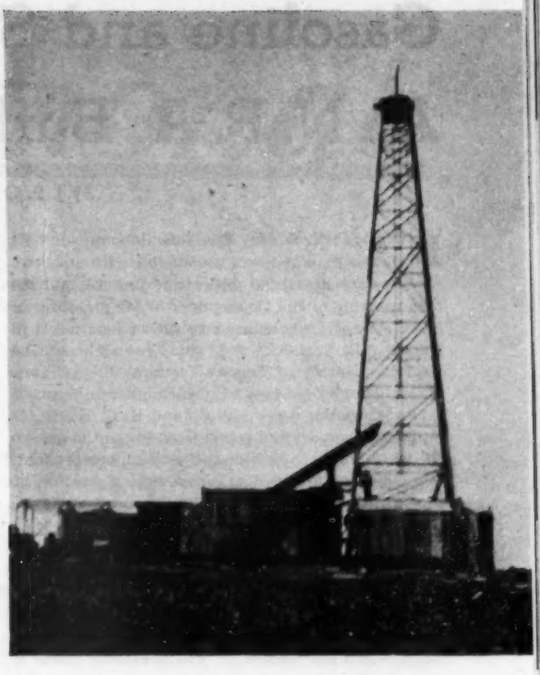
WATER ANALYSIS OF FRED GENZLER WELL, SE SECTION 12, TOWNSHIP 118N, RANGE 78W, POTTER COUNTY[2]

	Parts per million
Total solids	5009.0
Silica	12.0
Sulfate (SO_4)	None
Chloride (Cl)	2592.0
Calcium (Ca)	21.0
Magnesium (Mg)	11.0
Alkalinity as $CaCO_3$ phenolphthalein	None
Methyl orange	618.0
Hardness as $CaCO_3$	98.5
Iron	0.6
Manganese	None
Fluoride	0.6

2. Analysis made by Guy G. Frary, state chemist, South Dakota State Chemical Laboratory, Vermillion, South Dakota.

Several structural features are of special interest to the oil prospector in South Dakota, the chief feature probably being the fact that large areas of the state are included in the southern end of the great basin centering about the Williston synclinorium. "Basin drilling" similar to that which has been carried on in other parts of the United States, therefore, offers a possibility of returns in South Dakota. The edge of one or more sedimentary basins lies within the state. The Sioux ridge of pre-Cambrian quartzite has been followed westward as far as Chamberlain and apparently passes south of the head of the Lemmon syncline, separating the Lemmon syncline from the Nebraska and Kansas basins. The westward edge of this syncline is a structural basin only, and the sediments in this region are extremely thick. It ends, however, in a long zone of folding which includes the Black Hills and minor ridges to the north and south which have offered possible sites of oil accumulation.

The eastern side of the basin presents both structural and a stratigraphic opportunity for oil accumulation. The large terrace seems to have controlled the movement of artesian water and caused the accumulation of gas along its front. There is also an eastward thinning out and overlapping of formations which might cause traps for gas and oil.

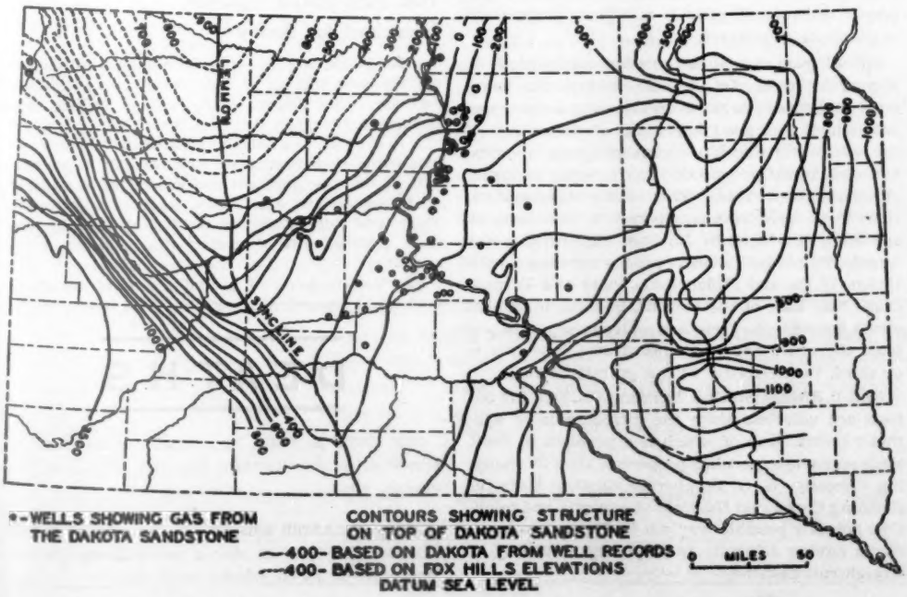


View of the Palensky well, Charles Mix County

Of secondary interest are the minor folds which are to be found on both flanks of the large geosyncline. Those on the west cover considerable territory and have large closures, while those on the east are, for the most part, low, rolling undulations. Because of the thick shale intervening between the possible oil horizons and the surface, these low folds exposed at the surface may be small reflections of larger folds lying beneath.

South Dakota is still very much unproven territory. The few wells that have been drilled have been located largely as a matter of chance, with insufficient geologic information. As this information increases, however, and the need for new sources of petroleum looms on the horizon, the state offers an inviting prospecting ground for those interested in the development of future petroleum supplies.

GAS AND STRUCTURE MAP OF SOUTH DAKOTA


SYNCLINE
0 MILES 50
*-WELLS SHOWING GAS FROM THE DAKOTA SANDSTONE
CONTOURS SHOWING STRUCTURE ON TOP OF DAKOTA SANDSTONE
—400— BASED ON DAKOTA FROM WELL RECORDS
---400--- BASED ON FOX HILLS ELEVATIONS
DATUM SEA LEVEL

Oil Men Expect Call On Defense Program

NEW YORK, May 28.—No invitation from Washington has been received by leading eastern oil executives to confer on the national-defense program, it was disclosed by a canvass of New York companies and the American Petroleum Institute early this week. Rumors have circulated in the East that Walter C. Teagle, chairman of Standard Oil Co. (New Jersey), would be invited to become a member of the defense board, but confirmation could not be obtained. The survey disclosed that oil executives anticipate a call to Washington for a discussion of the industry's capacity to fulfill its part of the program.

In Washington it was stated that no invitations have yet been issued to oil executives regarding conferences on the national-defense program. It is understood that representatives of the military departments have discussed certain phases of the situation with representatives of the industry. It is also understood that Army and Navy officials are well pleased with reports that the industry is fully prepared to furnish whatever oil supplies may be required.

Gasoline and Solvents Topics At N. P. A. Buffalo Meeting

By J. P. O'DONNELL

BUFFALO, N. Y., May 23.—Gasoline and solvents rather than matters associated with lubricating oils constituted the subjects of discussion at the May meeting of the Department of Manufacture of the National Petroleum Association last week in Buffalo. R. T. Lockwood, superintendent of the Buffalo refinery of Socony-Vacuum Oil Co., Inc., on the Houdry process; P. M. Robinson, Pennzoil Co., on gasoline sweetening; and S. S. Kurtz, of Sun Oil Co., on special solvents and naphthas, were the speakers. L. D. Fulton, refinery superintendent, Pennzoil Co., presided at the technical session at the Statler Hotel, and Mr. Lockwood and T. M. Berry conducted the Houdry unit inspection trip.

This unit, with a capacity of 10,000 bbl. per day, is operating at about 75 to 80 per cent of capacity, Mr. Lockwood said. The refinery is running Illinois crude, 40 per cent of which is topped off while the balance is run to the Houdry unit through a furnace and tar separator. The synthetic crude is flashed off in the tar separator in running to 16° gravity tar which is run to the thermal cracker. Mr. Lockwood described the passage of the charge through the unit, particularly emphasizing the catalyst cases where the progress is controlled by a 32-minute cycle timer. He also described the regeneration of the catalyst, likewise controlled by the cycle timer, by steaming followed by hot air to burn off the carbon deposit. Salt solution used to maintain the temperatures in the cases is taken to an evaporator where the excess heat is used in making steam. He cited this as one of the advantages taken of utility saving and estimated that 75 per cent of the utilities are used over again.

Mr. Lockwood said yields during the past winter averaged 50 per cent of 12-lb. v.p. 84½-85-octane gasoline and during the warmer weather since 47-48 per cent of 9½-10-lb. v.p. 83½-octane gasoline. Yields in January when the gasoline was stabilized to 13.6 lb. because of extreme cold weather, were 51.19 per cent gasoline, 25.34 per cent distillate fuel, 18.4 per cent bottoms and about 5 per cent gas and coke loss. The combination of the Houdry unit with thermal cracking has increased the refinery's overall gasoline yield 5 per cent and raised the octane of finished gasoline 5 points. The overall refinery gasoline yield is about 54 per cent of the crude charge, Mr. Lockwood said.

Fractionation of the products from the cases is completed in the synchronous crude tower, the overhead as gasoline, a cut from the third or fourth tray for fuel oil and the bottoms, usually 28° gravity ranging from 17 to 27 per cent of the Houdry charge, dependent on the amount and kind of fuel oil. These bottoms, thermally cracked, yield about 40 per cent gasoline. Charge to the unit varies, though the bulk is always topped crude. In April the average charge to the furnace was 4,398 bbl. per day of reduced crude and 3,888 bbl. per day of cracking stock and the charge to the cases from the tar separator was 6,838 bbl. per day, the remainder, 1,448 bbl., going off as tar which, thermally cracked, yields about 10 per cent gasoline.

With the importance of octane number stressed as highly as it is today, sweetening operations must develop into processes which aid rather than depreciate the octane number of gasoline and its lead susceptibility and reduce rather than increase inhibitor requirements, P. M. Robinson, of Pennzoil Co., said in his paper on gasoline sweetening. The ultimate end would be to remove sulfur from the crude before it enters the refinery. The copper sweetening process, he said, employs more simple equipment, loss of octane number is slight, lead susceptibility is not lowered and no more inhibitor is required for sweetened than for unsweetened gasoline if the plant is correctly operated.

D. J. Harvey, assistant superintendent, and L. P. Fulton, superintendent of refinery, Pennzoil Co., Oil City, Pa.

The solutizer process, developed by Shell Oil Co., Inc., was characterized by Mr. Robinson as a definite forward step. This process completely removes all the sulfur compounds, the octane number of the sweetened gasoline is increased as well as its lead susceptibility, while inhibitor requirements are decreased. The addition of a solutizer, such as potassium hydroxide plus potassium isobutrate, to caustic will dissolve the heavier-weight mercaptans which are impervious to caustic alone and the spent solution may be recovered by heating and blowing.

Paul Emery, United Refining Co., Warren, Pa., described the closely controlled plumbite-treating plant at that refinery and cited results to show that with proper control and supervision entirely satisfactory results can be obtained with this type of process. C. D. Lowry, Jr., Universal Oil Products Co., substantiated Mr. Emery's conclusion that proper control will provide satisfactory operation in plumbite sweetening.

Speaking on special solvents and naphthas, S. S. Kurtz., Jr., of Sun Oil Co., said attempts are being made to devise tests based on viscosity, a characteristic which is a good indication of the ability of the solvent to disperse resins properly. Results, however, must be reproducible in terms of kettle practice to be of value. The speaker discussed various tests based on viscosity which have been or are being developed by Du Pont, Sun Oil Co., Los Angeles Paint and Varnish Club in cooperation with Union Oil Co. and Philadelphia Paint and Varnish Club. The hole of the solvent, he said, is to penetrate between the resin molecules to separate one from the other and he demonstrated how this is attained, theoretically, with a polystyrol resin.

Neil T. Phelps, Sinclair Refining Co., said the old tests are valueless since the introduction of synthetic resins, each of which is a problem in itself since some have peculiar properties such as changing viscosity. G. G. Rumberger, Quaker State Oil Refining Corp., said the field of solvents and naphthas points a possible way out to Pennsylvania refiners having difficulty in disposing profitably of straightrun gasoline.

THE MARKETS*

CRUDE OIL: United States production last week, 3,837,429 bbl. per day, was 8,254 bbl. per day under the previous week's output. The Centralia field in Illinois hit a new peak with 31,136 bbl. per day, but the big Salem field continued to slip, and total Illinois production declined a little. Louisiana hit a new peak with 304,162 bbl. per day.

REFINERY: Oversea inquiry for gasoline offers first clear sign of possible beginning of export business. Market generally shows little likelihood of early emergence from dullness that has characterized it for weeks. Conditions are particularly ominous in California, where a price breakdown has begun. Standard of New Jersey and its northeastern marketing subsidiaries have set maximum heating-oil prices for next winter in contracts offered customers.

TANK-WAGON AND POSTED-DEALER: Socony-Vacuum announced tank-wagon gasoline reductions ranging from a quarter cent to 1.5 cents in the New England and northern New York areas. Standard of Kentucky reduced dealer gasoline prices 2 cents in Macon and Tampa, 1 cent in Jacksonville, and effected adjustments in consumer tank-wagon prices at several points. Standard of Louisiana reduced dealer gasoline price 1 cent in Nashville and advanced consumer tank-car price 1 cent in New Orleans.

FINANCIAL: Oil securities touched new lows for the year in the general market slump. They recovered some of their losses at the close. Average of 30 representative stocks for week ended May 25: High, 22.35; low, 19.04; close, 19.99. Week ended May 18: High, 26.39; low, 21.65; close, 22.04.

*Detailed information in market section.

Ethyl Gasoline Formula Suit Is Dismissed

TRENTON, N. J.—A $750,000,000 suit over the alleged theft of the Ethyl Gasoline formula was dismissed by Vice Chancellor Malcolm G. Buchanan, but a new complaint was promised by counsel for the plaintiff, Howard-Vaughan Co., defunct Buffalo, N. Y., concern.

James D. Carpenter, Jr., of counsel for the five defendant companies, charged the suit was "a fraud from top to bottom." Charles S. Mackenzie, lawyer for Howard-Vaughan, said the action "was brought in good faith and if it is dismissed we intend to start over again."

The suit has been pending in Chancery Court about a year, but Mr. MacKenzie said "we are not prepared to proceed at this time."

Defendants were Standard Oil Co. (New Jersey), Standard Oil Co. of New Jersey, General Motors Corp., Socony-Vacuum Oil Co., Inc., Ethyl Gasoline Corp., and E. I. du Pont de Nemours & Co.

Two High-Speed Tankers Launched for Jersey

NEW YORK, May 28.—Two more high-speed tankers for Standard Oil Co. of New Jersey were launched Saturday at the Kearny, N. J., yards of Federal Shipbuilding & Dry Dock Co., U. S. Steel Corp. subsidiary. The first of the two ships to slide down the ways was named the Esso Montpelier with Mrs. R. T. Haslam, wife of the vice president and general sales manager of the Standard of New Jersey, sponsoring the vessel. The second ship was named the Esso Concord by Mrs. E. A. Holbien, wife of another vice president of the company.

The tankers have an overall length of 450 ft., a deadweight capacity of more than 13,000 tons.

DEATHS

GEN. OTTO H. FALK, 74, chairman of the board of Allis-Chalmers Manufacturing Co., died May 21 at Milwaukee, Wis.

WILLIAM CARTER BRISSEY 77, oil producer, died at Oklahoma City May 23 after a year's illness. He had been active in the oil industry since 1901.

International

War . .

Effects of Invasions On Petroleum Supply

ABRUPT cessation of regular petroleum shipments to the invaded countries in western Europe and Scandinavia, intense bombing raids on refineries and storage terminals in the battle zones, and ordered destruction of oil supplies in the path of the German advance were the tangible results of fighting during the past 3 weeks.

Petroleum shipments to western and southern ports of France continue, and shipments to these points of entry for overland delivery to the Allied ground and air forces take up part of the losses caused by closing the ports of Holland and Belgium. The risk of Belgian petroleum stocks falling into German hands offset the possible advantage of having them nearer the actual zone of combat.

Refineries in northern and western Germany and storage centers in the industrial sections of the Reich were reported in British dispatches to have been intensely bombed and many direct hits scored. Bunkering stocks in eight large tanks at Amsterdam were ordered destroyed before Netherland troops were instructed to lay down their arms.

Totals only are available on the 1939 petroleum imports by the two Scandinavian countries now virtually under German domination. Denmark imported 6,870,000 bbl. and Norway received 5,401,000 bbl., according to statistics from the Bureau of Mines. In 1938 Sweden imported 10,176,000 bbl. of petroleum from all sources and it is probable from incomplete evidence at hand that 1939 petroleum receipts by Sweden did not change materially.

During 1939 Belgium and Luxemburg consumed approximately 5,152,000 bbl. of petroleum, including imports of finished products and those refined within the former country in plants at Ghent and Antwerp. From reports of the Belgian Customs Bureau and the Excise Bureau, the following interpretation of Belgian and Luxemburg petroleum consumption has been made for 1938 and 1939:

Products—	1938	1939
Motor gasoline	3,088,000	2,920,000
Industrial gasoline	24,000	24,000
Motor benzol	236,000	278,000
Total motor fuel	3,348,000	3,222,000
Kerosene	173,000	155,000
Gas oil	838,000	1,109,000
Fuel oil	144,000	184,000
Lubricating oil	418,000	482,000
Grand total	4,921,000	5,152,000

The Journal des Petroles, Volume 7, No. 1, Brussels, gave the following review of Belgian petroleum-refining activity in 1938 and 1939:

	1938 (bbl.)	1939 (bbl.)
Runs to stills:		
Crude oil	2,344,855	1,742,520
Other oils	10,912	8,540
Total	2,355,767	1,751,060
Manufactured products:		
Gasoline	653,413	517,227
Kerosene	147,693	123,577
Gas oil	384,092	312,269
Fuel oil	779,094	507,283
Asphalt	171,187	114,167
Other products and losses	220,288	176,537
Total	2,355,767	1,751,060
Delivered for consumption:		
Gasoline	573,367	443,077
Kerosene	110,925	100,556
Gas oil	310,850	242,697
Fuel oil	59,294	75,200
Industrial naphtha	2,774	5,428
Industrial white spirit	20,583	18,313
Benzine for degreasing	790	79
Asphalt	90,495	95,761
Total	1,169,078	981,111
Consumed in refineries:		
Fuel oil	162,743	120,471
Exported from refineries:		
Gasoline	32,875	27,200
Kerosene	23,133	27,467
Gas oil	190,499	138,595
Fuel oil	460,680	260,684
Asphalt	155,164	247,046
Total	862,351	700,992

The breakdown of Belgian refining figures is particularly interesting for its reflection of the importance of export business in fuel oils, being the result, according to the best information available, of the bunkering business carried out on the western shore of the country.

In another table covering exports of Rumanian petroleum products for the first 3 months of 1940, the Moniteur du Petrole Roumain shows England and Malta, common destinations so far as political affiliations are concerned, to have received a combined total of 316,912 metric tons of offshore movement from Constanza, the Mediterranean port. The extent to which movement of Rumanian petroleum from Constanza has been bottled up by the Allied fleet is revealed in the complete lack of exports from that point to Germany during the first quarter of this war year compared to 137,845 tons, or approximately 1,000,000 bbl. during the same period in 1939.

Details on exports for the first quarter of Rumanian petroleum from the Giurgiu, the Danube port of exit, and from Ploesti, where most railroad shipments originate, are not yet available, but during the first two months the average from both points was approximately 20,000 tons. On March 27, one of the first string of oil barges started moving up the Danube destined for Germany. The barge fleet reported on that date consisted of 30 vessels each carrying 600 tons of Rumanian petroleum. There remained a wide deficit at that time from the 130,000 tons of petroleum Germany was to have received each month of 1940 under terms of a trade agreement concluded with Rumania last December.

The table showing Constanza exports for the first quarter also shows that Italy and its possessions dropped to 11.91 per cent of the shipments compared to a share of 25.06 per cent for the first 3 months of 1939. On the other hand, France nearly doubled its purchases of Rumanian exports from Constanza the first quarter of this year to a total of 76,974 tons compared to the same period a year ago when the total was 43,792 tons moving to French ports, Tunisia and Morocco.

British and French companies produce 70 per cent of all oil in Rumania, or about 2,800,000 tons, for export in 1940. This leaves only 1,200,000 tons for export in the hands of Rumania, Italian, American and other companies, much of which already has been contracted for by countries other than Germany.

Rumania last December promised to ship 1,600,000 tons each year to Germany, or slightly more than 130,000 tons a month. But this agreement cannot be fulfilled without British-French production. Rumania's oil commissioner, therefore, has devised a scheme to collect in oil instead of cash an 11 per cent royalty which all foreign companies must pay to the government, or about 45 per cent of the retroactive royalties in oil.

SCANDINAVIAN PETROLEUM EXPORTS

Products—	Denmark 1939	Norway 1939	Sweden 1938
Gasoline	2,903,000	2,102,000	4,644,000
Kerosene	808,000	349,000	854,000
Fuel oils	2,562,000	2,639,000	3,597,000
Lubricating oils	247,000	118,000	436,000
Solvent oils	40,000	8,000	.....
Benzol	3,000	.....	.....
Paraffin wax	13,000	10,000	.....
Asphalt	294,000	107,000	.....
Crude oil	.....	68,000	645,000
Total	6,870,000	5,401,000	10,176,000

EXPORTATION OF RUMANIAN PETROLEUM PRODUCTS BY COUNTRIES OF DESTINATION

Country—	3 mos. 1940 Tons	3 mos. 1940 Per cent	3 mos. 1939 Tons	3 mos. 1939 Per cent
England	308,353	47.89	110,815	13.89
Malta	8,559		8,339	
Italy	73,370	11.91	211,410	25.06
Albania	1,701		1,736	
Rhodesia	1,142		1,922	
Ethiopia	590		.....	
France	28,626	11.63	21,096	5.10
Tunisa	28,867		14,687	
Morrocco	19,481		8,000	
Turkey	66,940	10.11	7,483	0.87
Greece	26,618	4.02	50,773	5.92
Egypt	15,728	2.38	78,801	9.18
Yugoslavia	11,034	1.67	2,071	0.24
Syria	9,382	1.42	25,671	2.99
Palestine	8,789	1.33	25,708	3.00
Sweden	6,997	1.06	24,875	2.90
Bulgaria	5,342	0.81	15,990	1.86
Denmark	51	....	9,809	1.14
Germany	.....	....	137,845	16.06
Other countries	2	....	47,557	5.54

UNITED STATES PETROLEUM EXPORTS TO FRANCE, HOLLAND, AND BELGIUM

Product—	France January	France February	France March	France First quarter	Holland January	Holland February	Holland March	Holland First quarter	Belgium January	Belgium February	Belgium March	Belgium First quarter
Gasoline	.....	.....	.....	.....	157,770	75,295	46,631	279,696	19,138	.....	.....	19,138
Crude oil	1,235,870	843,664	1,109,280	3,188,814	.....	.....	.....	.....	.....	.....	.....	.....
Natural gasoline	141,540	6,500	22,032	170,072	.....	.....	.....	.....	.....	.....	.....	.....
Aviation gasoline	42,640	61,010	.....	103,650	.....	.....	.....	.....	.....	.....	.....	.....
Benzol (gallons)	3,058,977	2,423,262	.....	5,482,239	.....	.....	.....	.....	.....	.....	.....	.....
Gas oil and distillate fuel	.....	.....	.....	.....	118,582	6,893	78,448	203,923	16,174	.....	36,150	52,324
Residual fuel	.....	.....	.....	.....	.....	.....	.....	.....	4,536	.....	5,425	9,961
Lubricating oil	18,670	101,264	23,407	143,341	33,260	5,783	26,888	65,931	99,662	2,230	8,990	100,882
Kerosene	366	125	.....	491	85,055	24,093	28,525	137,673	.....	.....	.....	.....
Mineral spirits	167	.....	.....	167	.....	50	.....	50	.....	.....	.....	.....
Total (barrels)	.....	.....	.....	9,088,774	.....	.....	.....	687,273	.....	.....	.....	182,305

California Gasoline Price Cut; Situation Becomes Critical

By L. P. STOCKMAN

LOS ANGELES, Calif., May 27.—Standard Oil Co. has announced that effective May 28 Ethyl Gasoline will be reduced 2½ cents per gallon and the regular first grade and third grade reduced 1½ cents and 2 cents per gallon respectively.

This action, which had been anticipated for several days, reflects conditions previously indicated by the adoption May 18 of the schedule issued by Standard Oil Co., which reduced crude-oil prices on February 1, by all California refiners and marketers, and the dissolution of the so-called gasoline pool whereby some marketers purchased surplus gasoline from independent refiners.

The U. S. Supreme Court's decision upholding the Madison case has caused California marketers considerable anxiety because next week, on June 3, Superior Court Judge Paul McCormick will accept pleas from those who have not yet entered pleas and will forthwith set the date for trial on the indictment returned by a federal grand jury November 14, 1939. This indictment is the result of an investigation of the California industry by a special federal grand jury, which began June 2, 1939 and returned an indictment charging the existence of an illegal conspiracy to fix gasoline prices on the Pacific Coast. The method of operation was simply this: Independent refiners organized the Independent Refiners Association of California and whenever any member had a surplus of gasoline the association was notified and the latter attempted to dispose of it to some other refiner and marketer. Many independent refiners and marketers found they could reduce their overhead and reduce losses by selling their gasoline in one sale rather than handling several hundred small accounts. They gradually pulled out of the market and left the association to sell gasoline for cash. In addition to cutting expenses this permitted the small independent refiner to pay cash for his crude oil and maintain his supply.

Thirteen small independent refineries were forced to shut down early this week. For the past year this group had disposed of production through the Independent Refiners Association but when the association suspended business last week it left many of them without pumps in the retail trade. If this group remains shut down and other operating refiners start out after new pumps with 5¼-cent or 5½-cent gasoline a price war may be anticipated within a relatively short time. Every effort is being made to refrain from doing anything that will start price cutting but current production must be disposed of or dumped to provide cash to pay for incoming crude oil. No actual data is available with respect to gasoline that the Independent Refiners Association sold monthly but it probably was around 5,000,000 gal. Included in the refiners forced to shut down due primarily to pending litigation resulting from the indictment are Aromolene, Inc., R. R. Bush Oil Co., California Oil & Refining Co., East-West Refining Co., Elm Oil Co., Envoy Petroleum Co., Harbor Refining Co., Mercury Petroleum Corp., Pan Pacific Oil Co., Signal Hill Refining Co., and several others.

There have been no developments during the past week or 10 days that might indicate the future policy of the companies cited as defendants but it would not be surprising if they accepted another consent decree. The groundwork has already been laid because of the discontinuance of purchases and elimination of all objectionable practices. Some of the defendants are among those who have suspended refining operations. The indictment returned last November contained one count and was against the so-called 7 majors, the 5 secondary concerns, 27 independent refiners and marketing companies, and 2 trade associations. Those indicted are Standard Oil Co., Texas Co., General Petroleum Corp., Richfield Oil Corp., Shell Oil Co., Inc., Tide Water Associated Oil Co., and Union Oil Co., the so-called seven majors. The five secondary marketing companies are Gilmer Oil Co. (General Petroleum Corp.), Rio Grande Oil Co. (Richfield Oil Corp.), Signal Oil Co. (Standard Oil Co.), Seaside Oil Co., and Sunset Oil Co. (Tide Water Associated Oil Co.). Independent refiners and marketers named in the indictment are Aromolene, Inc., R. R. Bush Oil Co., California Oil & Refining Co., Century Oil Co., Caminol Co., Ltd., Eagle Oil & Refining Co., East-West Refining Co., El Camino Refining Co., El Tejon Oil & Refining Corp., Envoy Petroleum Co., Estado Petroleum Corp., Exeter Refining Co., Fletcher Oil Co., Hancock Oil Co., Harbor Refining Co., Kern Oil Co., Ltd., Macmillan Petroleum Corp., Mercury Petroleum Corp., Mohawk Petroleum Corp., Norwalk Co., Olympic Refining Co., Pan Pacific Oil Co., Petrol Corp., Rothschild Oil Co., Socal Oil & Refining Co., Triangle Oil & Refining Co., and White Star Oil & Refining Co. These companies sell 95 per cent of the gasoline sold on the Pacific Coast. The two associations named in the indictment are Independent Refiners Association of California, Inc., and the Fair Practices Association.

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Bureau Estimates Gasoline June Gain 7 Per Cent

The daily average supply of domestic crude oil estimated by the Bureau of Mines to meet the market demand in June 1940 is 3,620,300 bbl. This is 19,300 bbl. (1 per cent) more than the estimated demand for May, but 21,000 bbl. less than the actual demand for June 1939.

Daily average crude-oil production and runs to stills during the 4 weeks April 7 to May 4 were 3,809,000 and 3,541,000 bbl., respectively. During this period domestic crude stocks increased an average of 227,000 bbl. daily, indicating a demand of 3,582,000 bbl. per day, compared with 3,550,000 bbl. estimated by the bureau. The runs, however, were 150,000 bbl. daily more than the bureau estimated, resulting in an increase of about 800,000 bbl. in gasoline stocks rather than the substantial decrease that was estimated.

ESTIMATED DAILY AVERAGE CRUDE-OIL DEMAND BY STATE

State—	Forecast June 1940	Forecast May 1940	Actual June 1939
Texas	1,344,600	1,344,200	1,409,000
California	593,700	592,600	649,000
Oklahoma	408,600	408,100	469,000
Illinois	395,600	392,900	216,000
Louisiana	274,700	264,500	259,000
Kansas	159,000	158,100	204,000
New Mexico	106,700	103,900	117,000
Wyoming	73,000	72,900	76,000
Arkansas	66,700	64,500	61,000
Michigan	62,000	63,200	65,000
Pennsylvania	49,400	52,100	47,000
Montana	18,300	17,400	18,000
Kentucky	15,000	14,500	16,000
New York	14,000	14,900	13,000
West Virginia	11,000	10,000	7,000
Ohio	9,000	9,800	8,000
Indiana	8,000	8,100	3,000
Mississippi	7,000	5,800	.....
Colorado	4,000	3,500	4,000
Total	3,620,300	3,601,000	3,641,000

Current war conditions indicate further interruptions to our export trade in oil, consequently reduced estimates of exports offset much of the anticipated increase in domestic demand. An adequate seasonal reduction in the abnormally high stocks of gasoline will mean that currently less gasoline production is required than last year, although the increased demand for all products may require that substantially the same amount of crude be run to stills. Increased demand for fuel oils, coupled with depleted stocks east of California, indicate the continuance of lower gasoline yields and higher distillate fuel-oil yields if a better balance between products is to be established.

The estimated domestic demand for motor fuel is 53,200,000 bbl., a gain of 7 per cent over the June 1939 demand.

The estimate of 2,400,00 bbl. for exports is 400,000 bbl. less than the estimate for May and is but little more than half of what the actual exports were in June 1939. Indications are that the allied countries will continue to supply the major part of their needs from other countries.

Stocks of finished and unfinished gasoline on March 31 totaled 103,710,000 bbl. Statistics of the American Petroleum Institute indicate that stocks increased about 800,000 bbl. during April, which would bring them close to 104,500,000 bbl. as of April 30, or about 17,000,000 bbl. higher than last year. The bureau estimates a reduction of 6,200,000 bbl. in gasoline stocks in June 1940 compared with an actual decline of 3,947,000 bbl. in June 1939. Whereas, it is usually necessary to intensify refinery operations during the summer to supply the greater motor-fuel demand, that need is not present this year.

Benzol and direct sales of natural gasoline are estimated as 1,200,000 bbl., making refinery production of gasoline 48,200,000 bbl. This is distributed among the various districts as follows (thousands of barrels): East Coast, 6,440; Appalachian, 1,930; Indiana-Illinois, 9,560; Oklahoma, 2,730; Kansas, 2,520; Inland Texas, 3,510; Texas Gulf Coast, 11,830; Louisiana Gulf Coast, 1,430; Inland Louisiana-Arkansas, 860; Rocky Mountain, 1,290; California, 6,100.

Runs to stills.—Natural gasoline to be blended at refineries is estimated as 5.4 per cent of the total refinery gasoline production, or 2,600,000 bbl. The yield of straightrun and cracked gasoline, in order to permit the accumulation of heating oil, is estimated at the low point of 43.5 per cent. The application of this yield to the production of 45,600,000 bbl. of gasoline gives crude runs of 104,810,000 bbl., or 3,493,700 bbl. daily. Foreign crude runs are estimated as 2,800,000 bbl.

Crude-oil exports are estimated as 4,600,000 bbl., 1,231,000 bbl. less than the actual exports of June 1939. The estimate for crude oil to be used for fuel and losses for June is 2,000,000 bbl.

The total demand for domestic crude oil in June, as indicated by the estimates, is 108,610,000 bbl., or 3,620,300 bbl. daily.

The breakdown of the total estimated daily demand for domestic crude oil of 3,620,300 bbl. gives the following crude requirements by states of origin. As these requirements may be supplied either from stocks or from new production, contemplated withdrawals from crude-oil stocks must be deducted from the bureau's estimate of demand to determine the amount of new crude required. These estimates are not recommendations for production but represent the projection of actual market trends by states.

BOOK REVIEW

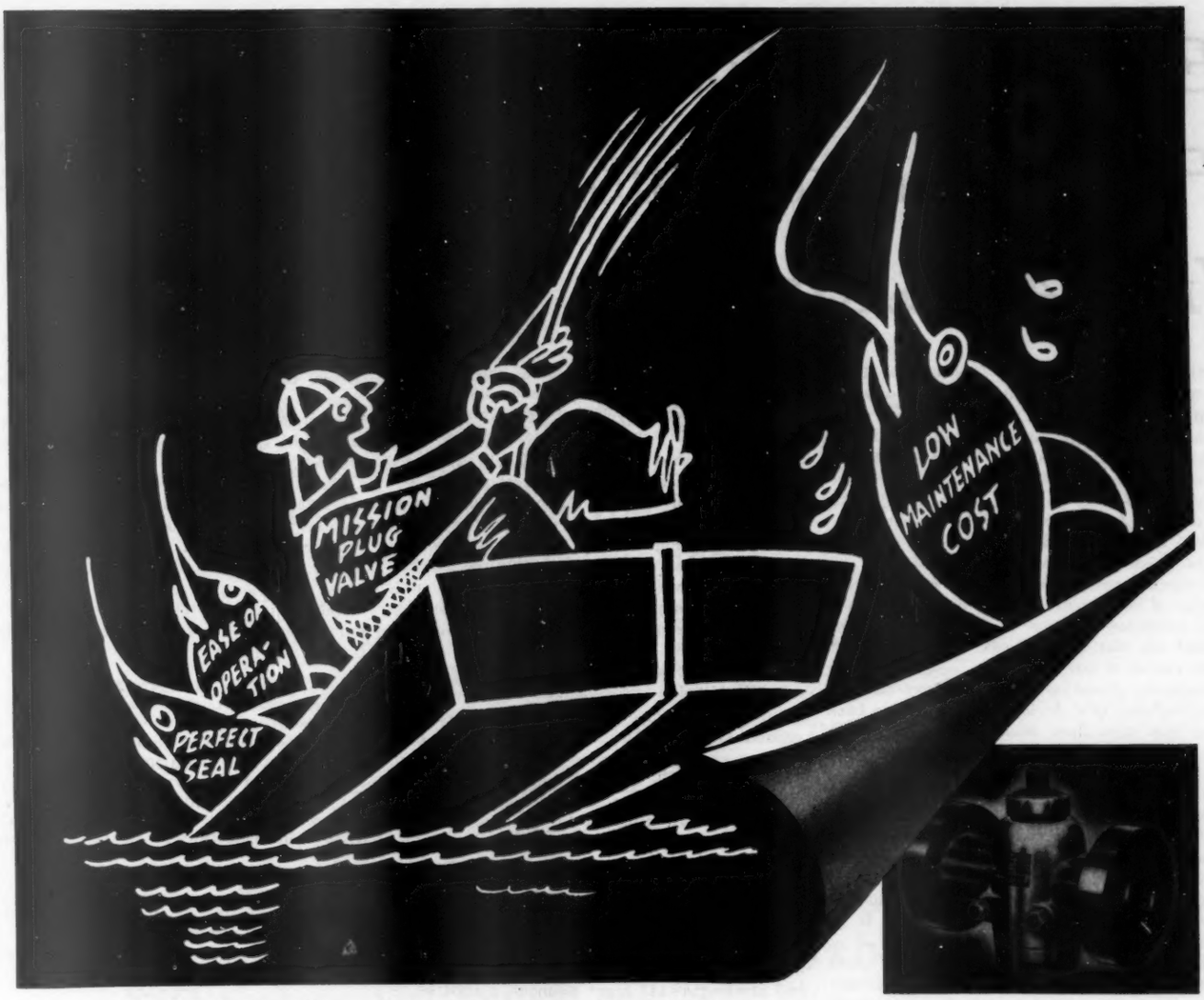
COMMODITIES IN INDUSTRY. Prepared and published by Commodity Research Bureau, Inc., 82 Beaver St., New York. 708 pp. $7.50.

This 1940 year book contains an interpretive review of movements in each of the leading commodities during 1939. Statistically it provides comprehensive tabulations of current interest. In addition, there are articles on war and commodities, trends in per capita commodity consumption, synthetic materials, weather forecasting and useful weights, measures and conversion factors.

●

MINERAL MAP OF EUROPE. Compiled by the geological department of the Pure Oil Co., of which Theron Wasson is chief geologist. 35 E. Wacker Drive, Chicago. 61 pp. $3.50.

Modern wars are fought with minerals and mineral fuels, as current events illustrate, and this book shows Europe's mines and oil fields, the proportion of world output from each country, its mineral reserves, deposits, production, consumption and sufficiencies or deficiencies. New mineral discoveries of importance in Europe are not expected as most of the continent has been explored thoroughly and the prospective areas are known. The section of this interesting compilation dealing with gas will be of special interest to oil readers.



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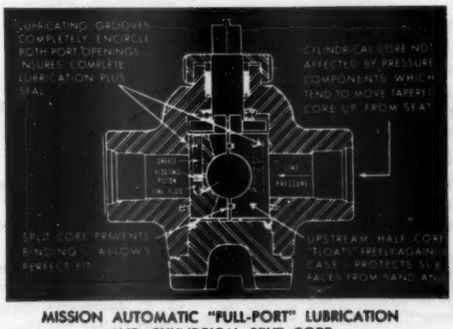
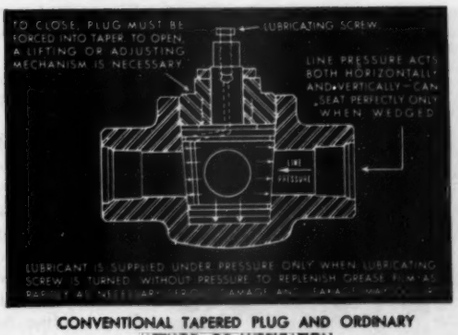

LUBRICATING GROOVES COMPLETELY ENCIRCLE BOTH PORT OPENINGS INSURES COMPLETE LUBRICATION PLUS SEAL
CYLINDRICAL CORE NOT AFFECTED BY PRESSURE COMPONENTS WHICH TEND TO MOVE TAPERED CORE UP FROM SEAT
SPLIT CORE PREVENTS BINDING — ALLOWS PERFECT FIT
UPSTREAM HALF CORE "FLOATS" FREELY AGAINST CASE — PROTECTS SEAT FACES FROM SAND AND

MISSION AUTOMATIC "FULL-PORT" LUBRICATION AND CYLINDRICAL SPLIT CORE

Line pressure on two lubricating reservoirs automatically maintains constant supply of grease and complete seal around each port. Cylindrical split core seats perfectly—positively cannot wedge—opens easily. Split core permits a perfect fit.


TO CLOSE, PLUG MUST BE FORCED INTO TAPER TO OPEN. A LIFTING OR ADJUSTING MECHANISM IS NECESSARY
LUBRICATING SCREW
LINE PRESSURE ACTS BOTH HORIZONTALLY AND VERTICALLY—CAN SEAT PERFECTLY ONLY WHEN WEDGED
LINE PRESSURE
LUBRICANT IS SUPPLIED UNDER PRESSURE ONLY WHEN LUBRICATING SCREW IS TURNED. WITHOUT PRESSURE TO REPLENISH GREASE FILM AS

CONVENTIONAL TAPERED PLUG AND ORDINARY METHOD OF LUBRICATION

Tapered core must wedge to fit seat—increases difficulty of operation. Vertical movement makes sealing difficult — especially without constant pressure on lubricant. Solid core will not wear evenly, accelerating wear.

Manufactured in 3 grades to meet working pressures of 2,000, 3,000 and 5,000 lbs.

Available at leading oil well supply warehouses.

Prices compare favorably with those of the best plug valves on the market.

Full details in The Oil Weekly Catalogue of 1940 and from oil well supply stores.

Prove to yourself how easily the Mission valve operates — with long wear and quick positive opening or closing. Install Mission valves in your most difficult conditions.

MISSION MANUFACTURING CO.— HOUSTON, TEXAS NEW YORK EXPORT OFFICE: 30 ROCKEFELLER PLAZA

Exposition Closes With Plans of Expansion In 1942 Show

THE management of the International Petroleum Exposition owned to feeling proud and happy over the success of the 1940 oil show, which closed last Saturday night; but little time was spent in self-congratulation. Attention was directed instead to plans for an even bigger and more helpful show in 1942. May 16 to 23 was the date set for the next biennial exposition.

More than half of the 628 exhibitors said they would be back again in 1942, and 63 of them said they wanted more space than they had this year.

Sales of equipment growing out of the show were estimated at close to $10,000,000. It was pointed out that the influence of the exposition in the matter of sales cannot be measured simply by contracts closed on the spot. Many oil men, after studying new devices on display, go back home, talk with their associates, think it over, and then order various new appliances. Every foot of exhibition space available for use this year was taken.

The Hall of Science, added to the exposition's plant in 1938 and enlarged this year in an effort to meet the demands upon it, will have to undergo still further extension or be supplanted by a more commodious structure, according to Dr. Gustav Egloff, of Chicago, who with Dr. B. B. Weatherby was in charge of this unit.

William B. Way, general manager, said plans for expansion of the show in 1942 were already under discussion and that committees to work out specific changes would be at the task soon.

Rain on 5 days kept attendance figures from reaching expected levels, but they were regarded as gratifying in view of the unfavorable weather.

"Of course we are sorry that rain interfered with the attendance of the general public," said W. G. Skelly, president of the exposition and head of the Skelly Oil Co. "Those who were kept away missed something, and that is to be regretted. But this year's show was unquestionably the best and most helpful we have held. Each exposition is better than its predecessor. More men actively engaged in the oil business were here this year than ever before. And really that is what counts, for after all, this exposition is designed to be of educational value to the oil industry."

During the 8 days of the show the exposition grounds were a busy, skillfully directed city, with an average population of more than 24,000. The 1,000 special workmen were about equally divided between those employed by the exposition and those employed by exhibitors. There were 127 silver-helmeted policemen directing the crowds, telling strangers where to find whatever they sought, smoothing out minor difficulties, and supervising the parking of cars in a manner that eliminated confusion that sometimes irritated motorists at preceding shows. About 200 persons were employed in cafes. There were 98 cashiers and gatekeepers, 47 night cleaners, a staff of 12 in the business office, 6 nurses in the first-aid station, 6 electricians, 6 men on truck crews, and 4 plumbers.

The week's exposition represented an outlay of about $40,000, half of which went out in pay checks. Indicative of the expansion since 1938 is the fact that electricity for the show cost about 33 per cent more.

Safety has assumed a place of high importance in the industry, and Thursday was set aside as a special day for its discussion. An all-day conference in the Hotel Tulsa was opened with a welcoming address by Mr. Skelly.

The principal address was given by B. C. Heacock, president of the Caterpillar Tractor Co., Peoria, Ill. Mr. Heacock, discussed the whole range of industrial relations, and gave striking evidence of improvement that has been effected in recent years. He emphasized the benefits derived in his own organization from adoption of modern accident-prevention policies. He told how shop routine had been demoralized during the 1939 world baseball series by expedients employed to find out how the daily battle was going. Efficiency was increased surprisingly by introduction of loudspeakers at the various plants and announcing the score at the close of each inning.

Other speakers on the program were H. N. Blakeslee, American Petroleum Institute, New York; R. C. Ledbetter, Employers Casualty Co., Dallas, Tex.; Col. John Stilwell, president, National Safety Council; Dr. Gustav Egloff, Universal Oil Products Co., Chicago; W. R. Wallace, vice president, Mid-Continent Oil and Gas Association, Kansas-Oklahoma division; Felix Doran, Jr., General Motors Sales Corp.; D. V. Stroop, American Petroleum Institute; Col. Philip Donnell, school of engineering, Oklahoma A. & M. College, Stillwater, Okla.

Watches were presented to the 12 individual winners in the safety contest sponsored by the exposition. The names and the record of each were published in The Oil and Gas Journal of May 9, Page 28.

The truly international character of the exposition was demonstrated by the presence of 163 delegates from other lands. These visitors were emphatic in their expressions of praise. For the first time there was the International Building, set apart for the accommodation of foreign delegates. Many of these were accompanied by their wives. One of the pleasant features of the week was the reception and buffet supper in honor of foreign delegates Tuesday night at the Tulsa Club, under the sponsorship of the exposition and the Nomads.

The 163 delegates present this year compare with 74 in 1938. It is understood that a substantial part of the business placed with manufacturers represented at the show was in contracts signed by some of these visitors from 25 other countries.

Delegates from foreign countries whose names did not appear in last week's issue of The Oil and Gas Journal follow:

ARGENTINA

Oliver Attridge, Lucey Export Corp., Buenos Aires; J. W. des Champs, Hughes Tool Co., Lucey Export Corp., Buenos Aires; M. Evangalista, government.

BELGIUM

I. Meeus, Petrofina, Brussels.

CANADA

James R. Lowery, Home Oil Co., Ltd., Calgary; Ralph Will, Anglo Canadian Oil Co., Ltd., Longview, Alta.

COLOMBIA

M. S. Dennely, Socony Vacuum Oil Co., Ltd., Cucuta; Mont Land, Tretolite Co., Bogota.

DUTCH EAST INDIES

S. B. Merrick, N.N.G.P.M., Babo, New Guinea; Dr. A. J. de Jager, Shell Oil Co., Inc., Borneo.

ECUADOR

S. P. Duffield, Ecuador Oil Fields, Guayaquil.

ENGLAND

Norval E. Baker, Iraq Petroleum Co., Ltd., London; Ernest W. Mills, Renold & Coventry Chain Co., Ltd., Manchester.

JAPAN

Hideo Kawamura, Japanese Government, Tokyo; Katsuichi Murayama, Asano Bussan Co., Tokyo; Zenzo Matsumura, Maruzen Oil Co., Kobe; I. Terao, Mitsubishi Co., Tokyo.

MEXICO

E. L. Roberts, Cia. Metalurgica Mexicana, San Luis Potosi.

NETHERLANDS

Dr. P. D. Timmermans, Shell Oil Co., Inc., Aerdenhout.

PERU

C. C. Brunton, Irite Petroleum Co., Negritos.

RUSSIA

E. S. Sergeev, government; T. Korviakov, A. Leningrad.

TRINIDAD, B. W. I.

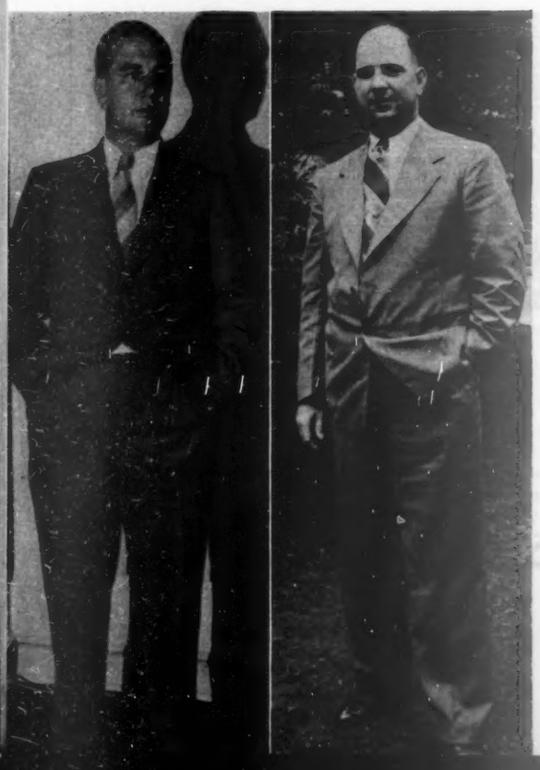
S. R. Chambless, Hughes Tool Co., Port of Spain; J. C. Dougherty, Seismograph Service; T. E. Harris, Reed Roller Bit Co., Victoria; D. D. Lewis, Lucey Export Corp., Port of Spain.

URUGUAY

Daniel Rey Vercesi, Administracion Nacional de Combustibles, Montevideo.

VENEZUELA

Ross E. Colley, Socony Vacuum Oil Co., Inc., Caracas; T. R. Farris, Shell Oil Co., Inc., Maracaibo; Leland Gardner, Mene Grande Oil Co., Maracaibo; Joseph O. Gray, Standard Oil Co. of Venezuela, Carapito; Melvin Lobaugh, Mene Grande Oil Co., Maracaibo; C. D. Maddox, Lago Petroleum Corp., Maracaibo; Mariano T. Uzcategui, Standard Oil Co., Merida; Frank Siddell, Gulf Oil Co., Maracaibo; Mrs. A. C. Harmon, Lago Petroleum Corp., Maracaibo.



H. L. Fountain, drilling superintendent for Shell Oil Co., Sarawak, Borneo, and D. L. Girsham, drilling superintendent for Assam Oil Co., a subsidiary of the Burmah Oil Co., Burmah, India. Pictures of other foreign delegates appeared in last week's issue

A new standard

It's 72-74 octane rating now for house brand gasoline—that's the new standard (Motor method) of the Western Petroleum Refiners' Association

How much those two extra numbers cost refiners depends on how high octane they can make in the plant, consistent with good yield, and how much they have to buy

Dubbscracking makes the biggest yield of high octane gasoline from any charging stock and at lowest cost

U. O. P. catalytic polymerization increases the yield and boosts the octane rating still more

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor

Natural-Gas News

Columbia Gas & Electric Co. Plans 112-Mile Gas Line

Plans for construction of 112 miles of a new combination 16, 10 and 8-in. gas line from southwestern Pennsylvania to Olean, N. Y., were announced in New York last week by Columbia Gas & Electric Co. which will advance $1,787,000 to three subsidiaries to carry out the work. In increasing the capacity of facilities for delivery of natural gas to northern New York State the subsidiaries will utilize 42 miles of existing line in southern Pennsylvania through which previous flow from east to west will be reversed. The line will be equipped with two compressor stations located, according to present plans, at Elwood City and Iowa, Pa.

The loan of $1,787,000, papers for which have been filed with the S.E.C. in Washington, will go to Manufacturers Gas Co., Manufacturers Light & Heat Co. and Pennsylvania Fuel Supply Co.

The new facilities will enable the subsidiary companies to transport gas from the line of the United Fuel Gas Co. in West Virginia to the Home Gas Co., Binghampton Gas Works and Keystone Gas Co., subsidiaries of Columbia in New York State.

An order for 10,000 tons of steel pipe line necessary for the project has been split among Jones & Laughlin Steel Corp., National Tube Co. and Republic Steel Corp. Bids have been solicited on the compressor-stations equipment.

Kettleman Hills Dominates California Production

LOS ANGELES, Calif., May 27.—It has been several months since more than one new California gas well has been finished but operators made up for lost time last week by completing two commercial gas wells in widely separated areas. Development work in California gas fields has been at a low ebb during the past year, and no change can be expected as long as Kettleman North Dome continues to produce the vast volume of gas that it has for the past several years. The Kettleman North Dome field, during March 1940, produced more than 20 per cent of the total gas produced in oil fields and has led the gas production list for several years. This field still has considerable gas available and will have more when development of the Eocene is further advanced. Because of this large production none of the commercial gas fields has been allowed to produce on a steady basis. Several gas fields are allowed to produce a relatively small volume during the winter months, when the demand is highest, but they are invariably shut in during the spring and summer periods. The Rio Vista gas field, one of the largest and most productive in the state, is the only exception to this rule, due to its proximity to the San Francisco Bay region and the many small towns in the area. It is allowed to produce a small volume of gas practically all during the year. There does not appear to be much prospect of Kettleman North Dome operators reducing crude-oil production and consequently gas production will likewise continue at a high rate unless the state Railroad Commission steps in and prorates the output of gas from this field. Gas production and consumption appear to be taboo whenever an investigating committee enters the picture and even though several recommendations have been made that gas production be prorated by the commission nothing is ever done along this line. Gas companies serving commercial users as well as those serving communities for cooking and heating, are public utilities, and under state jurisdiction and regulation.

Up in the Rio Vista gas field of Solano and Sacramento counties, Calaveras Cement Co. completed No. 1 Elliott in Section 30-4-3, flowing 22,700,000 cu. ft. of dry gas per day from 4,135 ft. This well, which topped the productive Emigh gas zone at 3,945 ft., was brought in flowing through a 50/64-in. bean. It showed a tubing pressure of 1,720 lb. and a casing pressure of 1,750 lb. The well is producing from 190 ft. of formation as the shoe on the 6⅝-in. water string was set at 3,945 ft. In addition to private holdings, the State of California has an interest in this field as the state recently awarded a contract for exploitation of gas beneath the Sacramento River, as well as making several other contracts. This may later lead to regulation of gas production in other areas.

In the Delano (Trico) gas field of Kern and Kings counties Trico Oil & Gas Co. completed No. 3 Tulare farms, in Section 27-24-25, flowing 24,500,000 cu. ft. of gas daily from 2,509 ft. This well is located across the Kern County line in Kings County.

Gas Utility Revenues Gain for First Quarter

Manufactured and natural-gas utility revenues amounted to $271,625,400 for the first 3 months of 1940, as compared with $246,812,800 for the corresponding period of 1939, an increase of 10.1 per cent, it was announced by Paul Ryan, chief statistician of the American Gas Association.

The manufactured-gas industry reported revenues of $104,932,500 for the first quarter, an increase of 6.6 per cent from the same period of the preceding year. The natural-gas utilities reported revenues of $166,692,900, or 12.3 per cent more than for the first 3 months of 1939.

Total sales of manufactured gas for the first quarter were 111,700,700,000 cu. ft., an increase of 11.0 per cent. Natural-gas utility sales for the period amounted to 444,499,500,000 cu. ft., an increase of 12.4 per cent.

Manufactured-gas sales for domestic uses, such as cooking, water heating, refrigeration, etc., were 3.9 per cent above the same period of 1939. Sales for house-heating purposes gained 25.0 per cent, commercial uses gained 7.2 per cent and industrial uses increased 18.2 per cent.

Natural-gas sales for domestic purposes showed an increase of 14.7 per cent while industrial sales gained 13.2 per cent.

Natural-Gas Franchise for Ozona Is Granted S. S. Woods

MIDLAND, Tex., May 27.—A franchise for a natural-gas system for the town of Ozona, Crockett County, 15 miles southeast of the Todd field has been granted S. S. Woods, of Lerado, who plans to invest between $60,000 and $70,000 on the plant to be constructed in the town. The franchise is a nonexclusive, 25-year grant and work is scheduled to start within 30 to 60 days. Gas will be obtained from the Todd field.

Refinery Expansion

Union Oil Will Increase Los Angeles Refinery

In continuance of its refinery-expansion program for 1940, Union Oil Co. will begin construction of additional refining facilities at the Los Angeles refinery about July 1. Incorporating the latest technical developments in the processing of California crude oils, the new catalytic-cracking unit will be used for the production of a superior gasoline of exceptional high antiknock quality, free from gum-forming and corrosive sulfur compounds. This gasoline product will be utilized in the manufacture of the company's "76" gasoline.

War Gas Peps Diesel Fuel Oil

WASHINGTON, D. C.—Chloropicrin, a war gas which causes severe vomiting, will increase the "pep" of diesel-engine fuel oil, according to a patent (No. 2200-260) awarded to Alvin A. Burton of Albany, Calif. While increasing the power of diesel oil, the gas also is said to overcome engine knocking. Addition of as little as one-tenth of 1 per cent will increase the antiknock rating of the oil from 39 to 73, according to the patent, which is assigned to the Standard Oil Co. of California.

Aviation Fuel May Be Made From Methane

Dr. Aristid V. Grosse, Guggenheim Research Fellow at Columbia University, told the New York section of the American Chemical Society recently that methane (marsh gas) could produce high-powered aviation gasoline. More than 1,000,000,000 cu. ft. of the gas is available annually. At present, more than 90 per cent is wasted. The suggestion is of importance because aviation fuel is made synthetically, and methane would lower the cost of production.

California Gasoline Tax Gains 6.51 Per Cent

SACRAMENTO, Calif.—A gain in gasoline sales in California, starting more than a year ago, continued during April, the state Board of Equalization reported. On the basis of a distribution of 156,434,569 gal. during the month, a total tax of $4,693,037.07 was assessed. This represented a gain of 6.51 per cent over the $4,406,313.03 collected during the same month of the previous year. The April revenue also was higher than the assessment for March, which amounted to $4,615,940.04.

Despite the fact that 1939 was a record year from the standpoint of gasoline-tax collections, the returns for the first 4 months of the current year already are nearly one million dollars ahead of the same period of 1939. These returns for the two periods were: 1939 $16,407,531.75; 1940, $17,404,015.74.

Two Isooctane Plants Planned in Canada

CALGARY, Alta.—A statement of the Alberta Petroleum Association claims that with facilities for the manufacture of isooctane, the Turner Valley field could supply most of the probable aviation gasoline requirements of the empire air-training scheme. Present plans contemplate two isooctane plants, one in eastern and one in western Canada, for production of the blending agent.

Union Oil Co. Upheld in Dewaxing Contract

DENVER, Colo., May 27.—A contract whereby the Union Oil Co. of California obtained rights to a patent issued to Robert E. Stanton of Denver for electrical dewaxing of oil and which Mr. Stanton values at about $8,000,000 was held valid by district Judge Joseph Walsh.

Bareco Revamps Two Refineries

The Bareco Oil Co. is spending between $180,000 and $195,000 in improving refining facilities at Barnsdall and Wichita, Oscar L. Cordell, president, announced.

At Barnsdall the company is revamping the plant and installing water-cooling towers at a cost of between $65,000 and $70,000. It has just completed and put into operation another high-melting wax plant costing between $55,000 and $60,000.

At Wichita the company is building a new atmospheric distillation crude skimming oil unit, at a cost between $60,000 and $65,000, to replace an oil unit.

Pipe-Line Activity

Williams Brothers Lay Line For Stanolind in Fast Time

To connect the Stanolind Oil & Gas Co.'s No. 1 Hulen, which blew in last week as a wild well, 3 miles southwest of Alta Loma, Tex., Stanolind Pipe Line Co. let a contract to Williams Brothers Corp. for the laying of a line to Texas City to be completed in fast time. The line consists of 12 miles of 6-in. The contract was let on the afternoon of Friday, May 24. Stringing and construction work started immediately. On Sunday 3½ miles had been finished. According to the plans completion of the job was set for May 29; this would mean completion of the entire 12 miles in 5 days. No. 1 Hulen flowed wild for several days last week and sprayed oil for a distance of a mile until it was pinched in to flow through a 1-in. choke. The well was drilled to 9,166 ft.

Williams Brothers Corp. will start laying pipe before the middle of June in the reconditioning work which is being done for Northern Pipe Line Co. in Wyoming. Work on this 200-mile contract has been going on for over a month; so far operations have consisted of taking up and reconditioning, preparatory to relaying. Williams Brothers' organization is also laying pipe at Tipideaux, La., in the vicinity of Corpus Christi, Tex., and at Los Gatos, Calif.. The 450-mile line being constructed by this firm for Southeastern Pipe Line Co. in Georgia and Florida is to be completed early in June.

Lawrence Pipe Line Co. Lays 68 Miles in 26 Days

Recently Williams Brothers Corp. completed 68 miles of 6-in. gasoline line in 26 days for Lawrence Pipe Line Co. (subsidiary of Texas Pipe Line Co.) between Lawrenceville, Ill., and Mount Vernon, Ind.

The line connects Lawrenceville, location of the large refinery of Indian Refining Co. (Texas Co.) with the Ohio River. A blending plant has been erected at the Mount Vernon terminal. It is expected this will result in the barging of a considerably larger amount of gasoline up and down the Ohio, as far east as Pittsburgh, and south on the Mississippi to some Tennessee points.

The line is expected to carry 6,000 to 10,000 bbl. a day. It was completed in just 4 weeks, considered a short time for such a task.

Start Hearings on Bill on Pipe-Line Permits

WASHINGTON, D. C.—Senator Johnson (Democrat, Colorado), chairman of an interstate commerce subcommittee, began hearings Wednesday, May 29 on a bill to regulate oil and gasoline pipe lines. The bill would require companies desiring to build a new line or extend existing lines to apply to the Interstate Commerce Commission for authority.

Slaughter and Duggan Fields to Get Outlet

FORT WORTH, Tex.—A pipe-line outlet is to be laid to the Slaughter and Duggan fields in Hockley and Cochran counties. The 8-in. line is to be built by Texas-New Mexico Pipe Line Co. and will extend from Midland north to the fields, a distance of 110 miles.

From Midland the oil will be moved over the Gulf pipe-line system to tie in with the Texas-New Mexico Gulf Coast trunk line at its Crane County station. Already Texas-New Mexico is surveying right-of-way for the carrier, and it is understood a lateral line will be laid to the Cedar Lake field in east Gaines County, also without a pipe-line outlet. It could not be confirmed that a lateral also would be laid to the Wasson field in Yoakum and Gaines counties.

Development in the Slaughter and Duggan areas has been handicapped by the lack of a ready outlet, oil having to be trucked out to the nearest pipe-line station at Wasson or to supply local refinery demand.

Duggan's allowable is set with the June order at 776 bbl. daily and Slaughter at 3,017 bbl. Cedar Lake so far produces only about 300 bbl. daily.

Basin Pipe Line Co. Awards Contract for 120-Mile Line

Basin Pipe Line Co. has let a contract to O. C. Whitaker, Inc., and Brown & Root, Inc., for a 120-mile crude-oil line from Seagraves, Tex., to the Cosden Petroleum Corp. refinery at Big Spring, Tex. Deliveries of pipe are expected on the job about June 15. Construction work will begin at that time.

Another Legal Barrier Removed For Southeastern Pipe Line

ATLANTA, Ga.—The state Supreme Court last week denied a supersedes action which was intended to temporarily restrain the state Highway Board from granting permission to the Southeastern Pipe Line Co. to cross under state roads with its gasoline transportation system now under construction. This denial, which was made in a petition filed by Arthur Powell, of Atlanta, in behalf of 72 citizens, upheld a decision of Judge W. W. Mundy, of the Tallapoosa circuit. Judge Mundy dissolved a temporary injunction against the board after a hearing in his court. Judge Mundy's opinion sustained a recent ruling by Atty. Gen. Ellis Arnall that the road board was empowered to grant or deny the permission sought by the pipe-line company, and set out that the board did have the power to grant the permits provided the pipe line would not prove a hazard to public health or safety. The gasoline pipe line will run from Port St. Joe, Fla., through Georgia to the Tennessee line near Chatanooga.

Northern Natural Will Lay 22-Mile Line in Iowa

Northern Natural Gas Co. will build 22 miles of 10¾-in. pipe for a line from Boone to Ames, Iowa. The line is to be of all-welded construction and it will be coated for its entire length. Bids are to be received on June 5.

Saskatoon Pipe Line Ahead of Schedule

SASKATOON, Sask.—Preparatory work on the 162-mile line from the Lloydminster field to Saskatoon and the 80 miles of distributing line is 12 days ahead of schedule. Frank P. Fisher and H. R. Davis are in charge, while E. H. Phillips is preparing plans for the distributing system. A soil survey and analysis of the route is also in progress, and F. P. Fisher is making a survey of the topography of the pipe line. Gas is to be delivered to Saskatoon by November.

Natural Gasoline

Pacific Coast Liquefied Petroleum Gas Exposition in June

Sponsored by the Pacific Coast section, Liquefied Petroleum Gas Association, the first annual Pacific Coast Liquefied Petroleum Gas Exposition will be a feature of the meeting, June 27 and 28, at the Municipal Auditorium, Santa Barbara, Calif.

According to C. L. Parkhill, chairman, Pacific Coast section, the meeting will feature a program with the following papers: Thursday, June 27, "The Probable Trend of the New California Accident Commission Code," "Successful Appliance Sales, Service and Installation Methods," and "Transportation and Handling of Liquefied Petroleum Gas"; Friday, June 28, "Problems of Pumping Liquefied Petroleum Gas," "The American Gas Association Testing Laboratories and Their Relation to the Liquefied Petroleum Gas Industry," and "Building Fuel Load Through Space-Heater, Water-Heater, Refrigerator and Range Sales."

Long Lake Recycling Plant Is Near Completion

PALESTINE, Tex.—Work on H. L. Hunt's recycling plant in the Long Lake field, Anderson County, is nearing completion. The plant, which will have a capacity of about 50,000,000 cu. ft. of gas daily, will be the fourth for the field and the sixth to be completed in the county. Hunt now is taking easements for a gathering system to serve the plant.

Plan Recycling Plant In Hamman Field

AUSTIN, Tex.—Objections to proposed recycling and repressuring operations in the Hamman field, Matagorda County, were answered in a Railroad Commission hearing by testimony that waste would be prevented.

Royalty and landowners protested classification of a group of wells as gas wells, preliminary to the permit sought by Hamman Exploration Co. to recycle gas from three horizons into the fourth and deepest at 9,100 ft. After Dr. F. V. L. Patten, director of production, had described conservation benefits anticipated from such operations in other fields, there were no objections.

Owner of 19 of the 25 wells in the field, Mr. Hamman, intends to install a $250,000 plant that will recycle 20,000,000 cu. ft. of gas daily. The company has one well in the 8,800-ft. sand and three in the 9,100-ft. sand producing distillate, which under a state order of the commission could be classed as gas wells.

Hunt Production Co.'s recycling plant at Long Lake field, Texas

PROGRAMS AND MEETINGS

Petroleum Division of A.C.S. Symposium at Detroit

The Petroleum Division of the American Chemical Society has ambitious plans for a symposium on "Petroleum Chemistry's Contribution to the Automotive Field." This symposium is being organized as part of the American Chemical Society's convention in Detroit during the second week of September. The plans are in the hands of a committee composed of T. A. Boyd, G. M. Maverick, E. C. Williams, and M. R. Fenske, chairman.

It is expected that the papers to be presented will fall largely in five classes, as follows:

Petroleum as a source of automotive power—for automobiles, airplanes, trucks and tractors.

Petroleum as a lubricant—from the standpoint of physical properties, manufacturing operations, and performance.

Petroleum as a special material for use in coatings, lacquers and finishes, plastics, and such special products as are used in hydraulic drives and shock absorbers.

Petroleum on the road—asphalts, road oils, and emulsifiers.

General papers discussing such subjects as the chemical constitution of petroleum, new reactions in petroleum chemistry, and advances in refining equipment.

Under the last heading an effort will also be made to have outstanding representatives of the petroleum industry, the automotive industry, and the educational field review current problems as they see them, with special reference to future trends and requirements.

The committee in charge is now soliciting papers from those interested. Because the symposium provides for a broad discussion of recent accomplishments and current problems in the petroleum and automotive fields, active participation is expected from a large number of research and development organizations. As it will be necessary to limit the symposium to 1 or 1½ days, potential authors are urged to indicate their interest in particular subjects at an early date. Such communications should be addressed to Prof. M. R. Fenske, Pennsylvania State College, State College, Pa., with a carbon copy to C. R. Wagner, secretary of the Petroleum Division of the American Chemical Society, care of Pure Oil Co., 35 East Wacker Drive, Chicago, Ill.

Papers to be included in the symposium should be mailed in triplicate to Mr. Wagner to reach him prior to July 15, 1940. A 100-word abstract should accompany each paper. If it is not possible to have the complete paper on that date, three copies of a 1,000-word abstract at that time will be acceptable provided three copies of the complete paper are submitted prior to July 29. Papers not meeting this schedule cannot be placed on the final program because the Petroleum Division preprints all papers presented before it.

National Oil Scouts Association To Meet at Hot Springs

The National Oil Scouts and Landmen's Association will meet in Hot Springs, Ark., May 30 through June 1. Gov. Carl E. Bailey of Arkansas will welcome the delegates May 31.

Col. T. H. Barton, president of Lion Oil Refining Co., will discuss "Oil Development in Arkansas." Henry A. Ley, San Antonio, Tex., immediate past president of the American Association of Petroleum Geologists, will address the delegates on "Eyes of the Petroleum Industry." Joe Dawson, consulting geologist of Jackson, Miss., will present a paper on "Geology of Mississippi and Alabama."

East Texas A.I.M.E. Section Holds First Meeting

The first meeting of the East Texas section of the American Institute of Mining and Metallurgical Engineers was held at Kilgore, Tex., May 15, A. B. Parsons, secretary of the institute, informed the section that the directors of the institute had formally authorized the establishment of the East Texas section. The initial meeting of the section was arranged with the help of T. V. Moore (Humble Oil & Refining Co., Houston), chairman of the petroleum division.

The officers elected for 1940 were: Chairman, W. S. Morris, East Texas Engineering Association, Kilgore; vice chairmen, J. E. Warren, Carl B. King Drilling Co., Dallas, and R. O. Garrett, Arkansas Fuel Oil Co., Shreveport, La.; secretary-treasurer, H. F. Winham, Shell Oil Co., Inc., Kilgore; directors, R. H. McLemore, Sun Oil Co., Dallas; T. W. Johnson, Union Production Co., Shreveport; N. N. Jones, Humble Oil & Refining Co., Overton, Tex.; E. H. Blum, Atlantic Refining Co., Dallas; A. R. Campbell, Mid-Continent Oil and Gas Association, Shreveport; J. W. Steele, Federal Tender Board, Kilgore. The principal address was made by E. DeGolyer, professor of geology, University of Texas.

Oil Topics on Program of S.A.E. Summer Meeting

The thirty-fifth anniversary summer meeting of the Society of Automotive Engineers will be held at White Sulphur Springs, W. Va., June 9 to 14. Oil topics on the program include a paper on "Better Fuels for Better Engines," by W. H. Hubner, Ethyl Gasoline Corp., before the transportation and maintenance session Monday morning and the following before the fuels and lubricants session Thursday and Friday mornings:

Thursday, 8:30 p.m.—J. B. Macauley, Jr., chairman.

Reducing Aviation-Engine Fuel Volatility, D. P. Barnard, Standard Oil Co. of Indiana, and R. B. Cragin, M. W. Kellogg Co.

Some Economic Aspects of Aviation-Fuel Volatility, R. C. Alden, Phillips Petroleum Co.

The Effectiveness of the Burning Process in Non-knocking-Engine Explosions, Lloyd Withrow and Walter Cornelius, Research Laboratories Division, General Motors Corp.

Friday, 9:30 a.m.—B. E. Sibley, chairman.

The Use of Small-Scale Single-Cylinder Engines for the Evaluation of Motor Oils, A. O. Willey and C. F. Prutton, consultants, Lubri-Zol Corp.

Severe Duty Engine Conditions as Related to Oil and Fuel, C. M. Larson, Sinclair Refining Co.

An Instrument for the Continuous Measurement of Piston Temperatures, A. F. Underwood and A. A. Catlin, Research Laboratories Division, General Motors Corp.

A.I.M.E. Will Hold Two Fall Meetings

The Petroleum Division of the American Institute of Mining and Metallurgical Engineers will hold two fall meetings, the first on October 17 and 18 at Los Angeles and the second at Tulsa, October 24, 25 and 26.

MAGNETIC STORM

TUCSON, Ariz., May 25.—A moderate storm began May 23 at 12 o'clock and ended May 24 at 10 p.m. central standard time.

CALENDAR OF EVENTS

June

ILLINOIS-INDIANA PETROLEUM CONFERENCE, eighth annual meeting, Robinson, Ill., June 1.

NATIONAL ASSOCIATION OF PURCHASING AGENTS (Oil Company Buyers' Group) annual convention, Netherland-Plaza Hotel, Cincinnati, Ohio, June 3-6.

SOCIETY OF AUTOMOTIVE ENGINEERS, summer meeting, The Greenbrier, White Sulphur Springs, W. Va., June 9-14.

SOUTHWEST PETROLEUM CREDIT GROUP, San Antonio, Tex., June 17-20.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS, Milwaukee, Wis., June 17-20.

KENTUCKY OIL AND GAS ASSOCIATION, midsummer meeting, Lexington, Ky., June 21-22.

PERMIAN BASIN ASSOCIATION, semiannual meeting, Odessa, Tex., June 21-22.

AMERICAN SOCIETY FOR TESTING MATERIALS, Chalfonte-Haddon Hall, Atlantic City, N. J., June 24-28.

ILLINOIS BASIN CHAPTER OF AMERICAN PETROLEUM INSTITUTE, McCurdy Hotel, Evansville, Ind., June 29.

September

AMERICAN SOCIETY OF MECHANICAL ENGINEERS, Spokane, Wash., September 3-5.

AMERICAN CHEMICAL SOCIETY, Detroit, Mich., September 9-13.

NATIONAL PETROLEUM ASSOCIATION, thirty-eighth annual meeting, Hotel Traymore, Atlantic City, N. J., September 18-20.

NATIONAL LUBRICATING GREASE INSTITUTE, annual convention, Stevens Hotel, Chicago, September 30-October 1.

October

AMERICAN GAS ASSOCIATION, Atlantic City, N. J., October 7-10.

NATIONAL SAFETY CONGRESS, Stevens Hotel, Chicago, October 7-11.

INDEPENDENT PETROLEUM ASSOCIATION OF AMERICA, eleventh annual meeting, Dallas, Tex., October 16-18.

TEXAS MID-CONTINENT OIL AND GAS ASSOCIATION, annual convention, celebrating Texas oil's forty-fifth birthday, Fort Worth, Tex., October 31-November 2.

November

AMERICAN PETROLEUM INSTITUTE, twenty-first annual meeting, Stevens Hotel, Chicago, November 11-15.

1941

April

NATIONAL PETROLEUM ASSOCIATION, semiannual meeting, Hotel Cleveland, Cleveland, Ohio, April 24-25.

Sections of pipe, lined up after welding and coating, before being laid off shore in the construction of a marine loading line at Casmalia, Calif.

ENGINEERING & OPERATION

MAY 30, 1940

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DEVELOPMENTS IN GAS-RECYCLING PLANTS
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APPLICATION OF SUPERHEATED STEAM TO COMBINATION-UNIT PRIME MOVERS
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BUILDING OIL PIPE LINE ACROSS CONTINENTAL DIVIDE
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EFFECT OF FORMATION PERMEABILITY ON BEHAVIOR OF MUD FLUIDS
By H. T. Byck ..... Page 50
Attention is directed to factors which should be considered in studying the penetration of drilling muds in formations.

CATHODIC PROTECTION OF CONDENSERS AND COOKERS USING BAY WATER
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N.G.A.A.—OPERATING KINKS ..... Page 40

SAFETY—Modern Board Aids in Tubing Job ..... Page 51

PROGRESS IN METALS—By W. L. Nelson ..... Page 53

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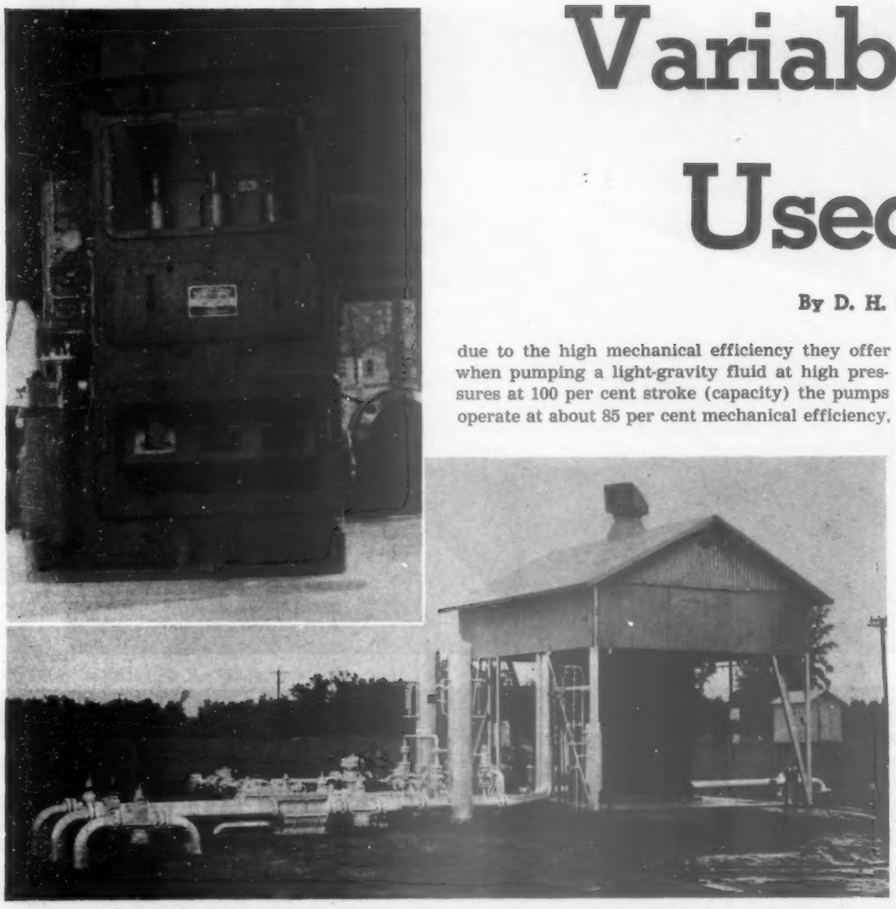
Variable-Stroke Used on East

By D. H. STORMONT



View of the Kilgore pump station showing intake and discharge lines, metering equipment and housing for the variable-stroke pumps. The inset at top shows a closeup view of the pump used at Kilgore during its installation

IN the main-line stations on Magnolia Pipe Line Co.'s butane line from the East Texas field to the Gulf Coast, new-type reciprocating pumps were recently installed in which the desirable features of both centrifugal and reciprocating pumps are included. In medium and high-pressure pumping the conventional reciprocating pump offers positive displacing action and superior efficiency, but lacks the flexibility of capacity and constant pressure contained in centrifugal pumps. These unique pumps, in accomplishing these functions, make use of a mechanism whereby the length of the plunger stroke varies according to the pumping load without requiring any change in the speed of the prime mover. Thus, for the first time in pipe-line history, reciprocating pumps are performing functions that have heretofore been possible only with centrifugal pumps.

The Magnolia line was completed last fall, but until the first of this month its pumping facilities have consisted of conventional reciprocating equipment. The 186-mile line is made up of 4, 5, and 6-in. pipe and extends from a point near Kilgore in the East Texas field via Center, Pineland, and Kirbyville to the company's Beaumont refinery. Pumping stations were built at Kilgore and Pineland, and are identical in layout except that at the former purchased electric power is used while at the Pineland station power is supplied by a 165-hp. gas engine driving a 156-kva., three-phase generator. Facilities at the two stations consist of the vertical triplex variable-stroke plunger-type units driven by 75-hp., 900-r.p.m., 440-volt squirrel-cage motors. With its present equipment the line has a capacity of 4,200 bbl. daily.

The triplex variable-stroke pumps were chosen due to the high mechanical efficiency they offer when pumping a light-gravity fluid at high pressures at 100 per cent stroke (capacity) the pumps operate at about 85 per cent mechanical efficiency, and over a wide range of capacity the efficiency remains practically constant. The pumps were designed to operate at a minimum suction pressure of 50 lb. and a discharge pressure of 850 lb. Plunger diameter is 3¼ in. and the stroke may be varied from 0 to 6 in. Operating at any capacity from 0 to full flow, the pumps always run at 200 s.p.m.

At the end of 40 days' operation during which time the pumps worked at 90 per cent stroke (or capacity), taking suction at 100 lb. and discharge at 650 lb., the pumps have operated at 83.5 per cent mechanical efficiency at the pump shaft. Power consumption over this period averaged slightly less than 39 kw. per hour at the buses of the generating unit, including wire and transmission losses, starting compensator, V-belt drive, and pump friction. At the 90 per cent stroke 118 gal. of butane were metered and pumped per minute, or at the rate of 4,045 bbl. per day.

The principle of the new-type pump (made by Aldrich Pump Co.) is indicated in the accompanying simplified cross-sectional drawing (Fig. 1).

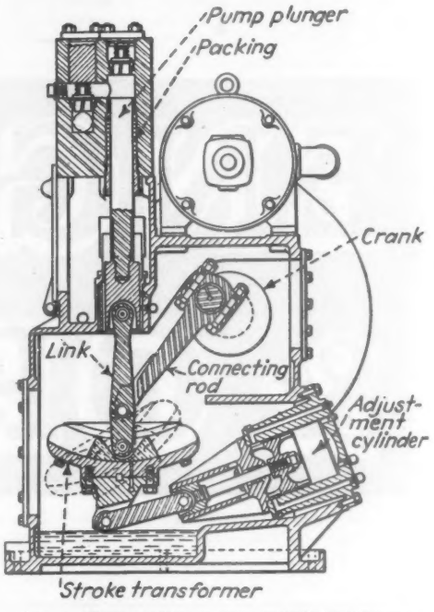
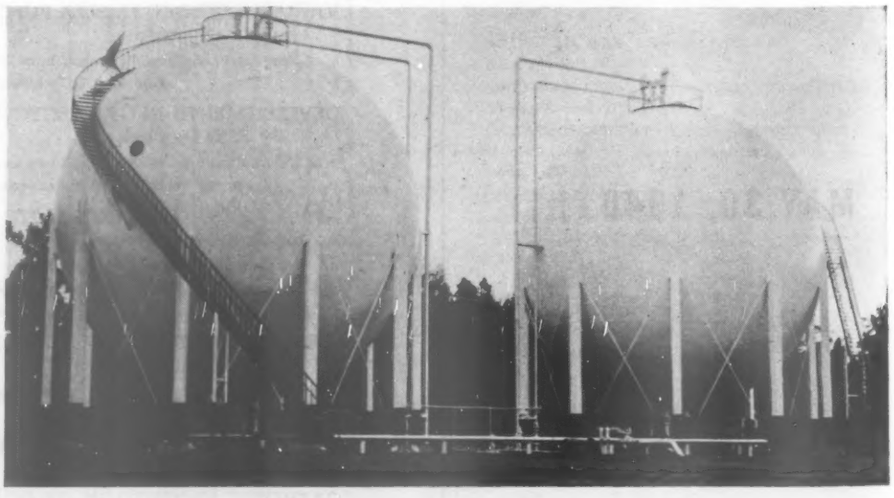


Fig. 1—Cross-section of new Aldrich-Groff pump



Pressure storage at the Kilgore station, Kilgore, consists of two 10,000-bbl. tanks of 75-lb. working pressure. No other storage is used until the butane is taken from the line of the company's refinery at Beaumont, Tex.

Triplex Pumps Texas Line

The pump proper does not differ greatly in principle from the conventional triplex pump design, but the variable-stroke feature is decidedly novel. The three plungers are driven from the single crankshaft by individual mechanism, but since all are driven identically the following description will apply to only one:

Above: Variable-stroke pump and instrument board at Magnolia's Pineland station. The pump in the background was temporarily installed prior to the vertical triplex pump being placed in operation. Right: Intake lines, meters and volume tanks at the Pineland station with the crude-oil pump station in background

The pump crank, driven through a herringbone reduction gearing from the 75-hp. constant-speed motor, causes reciprocation of the connecting rod. This rod is pivoted to a link and serves to oscillate the link about its pivoted connection to the pump plunger crosshead. To the bottom of the link is pivotally connected a bronze guide shoe that slides back and forth within the smooth curved track of the "stroke transformer," which is a casting of semisteel. The radius of curvature of this track corresponds to the length between the pivot centers of the link.

Action of Guide Shoe

The action of the guide shoe within the track of the stroke transformer may be likened to that of the plunger crosshead, except that the block describes a circular path whereas the crosshead describes a straight path. Following good practice for sliding crossheads with pressure lubrication, the unit bearing pressure upon the guide block is less than 100 lb. per sq. in. In this connection, it is worthy of note that the connecting rod and link compose an ideal force diagram, whereby the vertical component of the rod in tension takes a major portion of the compressive load of the link to thus relieve the guide block of a majority of the plunger load when pumping.

In the position shown for the stroke transformer, oscillation of the link causes no movement of the piston—the motor may be operating at full speed, but rotation of the crank merely oscillates the link and shoe back and forth with no stroking motion being imparted to the pump plunger. However, when the piston in the adjustment cylinder, through its connecting link, tilts the stroke transformer upward toward the right, the effect is to produce reciprocating movement on the plunger upon oscillation of the link. The stroke transformer can be tipped through any angle from zero to maximum (an angle of 30° allows the plunger to reciprocate at full stroke) therefore movement of the pump plunger can be controlled between zero and maximum capacity of the pump.

In regard to the pump proper, special features include discharge valves located directly above the plungers, and inlet valves at one side of the cylinder. The upright design prevents entrance of air into the pumping chamber via the stuffing boxes, because the plunger packing is sealed by the liquid. Due to the "drying" nature of butane all portions of the plunger in contact with the packing (about 8 in.) are of porcelain, which is not affected by corrosive or abrasive materials, thus packing and leakage trouble are reduced. The rifle-drilled crankshaft with automatic pressure lubrication, and the efficient valve action permit the pump to operate at the high rate of 200 s.p.m., whereas in conventional reciprocating pumps the speed normally is about 60 s.p.m.

Although the pumps are designed for a 50-lb. static head on the suction side of the pump, tests made at the Kilgore station show that it will operate efficiently with no pounding at much lower suction pressures. The vapor pressure exerted by the butane would be approximately the same on both the suction and discharge sides of the pumps, but the gage pressure is in reality a combination of the static fluid head and vapor pressure of the butane. Thus the limiting pressure below which the pumps cannot efficiently operate must of necessity be higher than the vapor pressure of the butane. However, in an experiment to see just how low a static head could be reached with the pumps, one tank was pumped down to a 20-ft. static fluid head—or a suction pressure of only about 10 lb. At this low suction pressure the pump continued to operate without pounding.

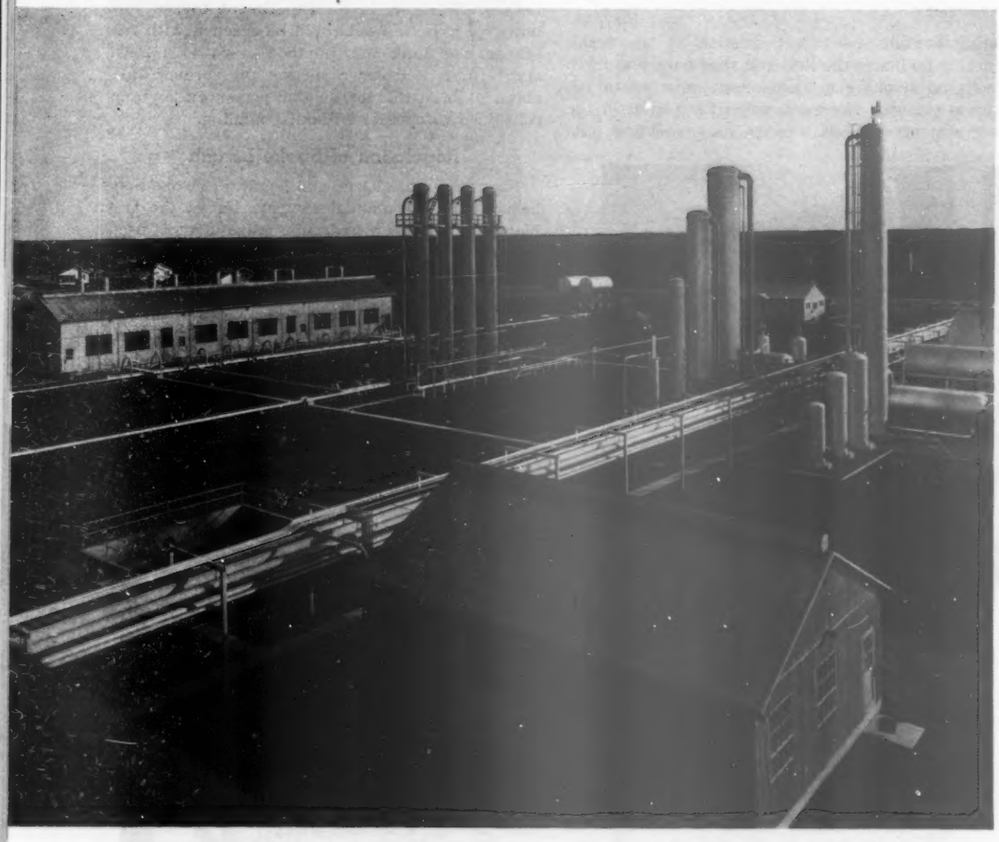
Regulation of Stroke Length

The pump's discharge and length of stroke may be regulated by manual controls, but at the two Magnolia stations a hydraulic adjustment is used for remote automatic control. At Kilgore the rate of transfer and pump stroke are controlled by the discharge pressure of the pump, while at Pineland a pressure controller operating on the suction side of the pumps regulates its operation. Thus operation of the two stations is completely synchronized.

This automatic control of the Kilgore pump's output is accomplished by means of a diaphragm regulator installed on the pump and an orifice meter on the downstream side of the pump. The differential pressure across the orifice meter, which is a function of the rate of flow, therefore regulates the stroke of the pump. If the rate of discharge should tend to fall off, the corresponding drop in differential pressure would be reflected on the diaphragm. A link attached to the regulating piston would operate a four-way oil-control valve, causing oil supplied by a lubricating-oil pump to exert a pressure of about 75 lb. per sq. in. against the outer surface of the double-acting adjustment cylinder. Simultaneously, oil is discharged from the other end of the cylinder against a back pressure of about 25 lb., thereby permitting the piston to move to the left so that the stroke transformer moves to a less-inclined position. This, of course, results in the stroke of the plunger being shortened and the quantity discharged by the pump is reduced. To illustrate the ability of the system to meet changing conditions, the pumps will go from no-stroke to full-stroke in about 10 seconds, or vice versa—with the motor and the pump operating at its normal speed at all times.

(Continued on Page 62)

Developments in Gas Recycling Plants



General view of Agua Dulce plant of Coastal Recycling Corp. One of the largest distillate plants in operation

THE economic production of distillate from the true gas-phase structures by unusual extraction methods combined with pressure maintenance, as performed by the incorrectly termed "recycling plant" has now taken an important place in the oil industry.

The first major recycling plant was placed in operation in December 1938 by the Corpus Christi Corp. on its properties in the Stratton field, Nueces County, Texas. This plant is of the simplest design, utilizing cooling and expansion with brine injection to prevent the formation of hydrates to extract the distillate. The distillate produced is stabilized to conform to market conditions and the dry gas is returned to the formation from which it originated by single-stage compression. Naturally, the power required to return the gas to the formation is of major consideration, and it is therefore imperative that the compressor-suction pressure be maintained as high as possible. Inasmuch as fairly good extraction efficiencies could be realized at 1,200 lb. and 30° F. by simple cooling and expansion and the horsepower requirements to compress the gas to the required 3,000-lb. input pressure was not excessive, the economics of the program was established.

*Presented before the Natural Gasoline Association of America, annual meeting, in Tulsa, May 15-17.

By E. E. DeBACK
The Corpus Christi Corp.*

In December 1939 the Coastal Recycling Corp. started its plant in the Agua Dulce field on a royalty agreement with the Union Production Co. This plant differs from the Corpus Christi Corp.'s plant only inasmuch as it operates on a high-pressure absorption cycle instead of the retrograde-condensation principle. This is due to the fact that well pressures and the analysis of the gas were such that satisfactory extraction efficiencies could not be attained by cooling and expansion without involving excessive compressor horsepower. The absorbers are now operating at 1,350 lb. gage with a top future of 1,500 lb. gage.

The Gulf Plains Corp. anticipates the starting of its plant in the Sullivan and Stratton fields, Nueces County, Texas, about July of this year, and this plant will also be of the high-pressure absorption design with the absorbers operating at 1,500 lb. gage.

Several other companies now contemplate involving absorption pressures up to 2,000 lb. gage and compressor-discharge pressures up to 6,000 lb.

N.G.A.A.—Presented before the Natural Gasoline Association of America annual meeting in Tulsa May 15-17.

Comparison of Extraction Efficiency

It has been established that the direct separation-refrigeration process when operating at 1,200-lb. gage pressure and 30° F. on a wet gas containing 1 gal. of isopentane plus per 1,000 cu. ft. of gas reflects an extraction efficiency of this fraction of about 85 per cent. Under the same temperature and pressure conditions extraction efficiency becomes lower and lower as the percentage of heavy hydrocarbons is reduced.

An absorption plant operating at the same pressure (1,200-lb. gage) and under normal temperatures, as obtainable by water cooling of both gas and oil streams, realizes an isopentane plus fraction-extraction efficiency of 96 to 98 per cent when circulating approximately 2 gal. of absorption oil per 1,000 cu. ft. of gas, the absorption oil being a 35-gravity, 510 initial, 620 end point product. Particular attention should be given to the selection of the absorption oil to be used in a high-pressure plant. Its emulsion characteristics should be especially good and the connate water extracted from the gas in the absorber should be drawn off before the fat oil goes through the stage weatherers.

The process of stage weathering the fat oil from 1,200-lb. or greater pressure down to the distillation-unit pressure is deserving of close study. Normally, not less than three stages of venting are necessary to properly vent the lighter and undesired hydrocarbons from the oil so that excessive recompression or reabsorption of distillation-unit noncondensables will not be necessary. Generously oversized vent tanks and vent-tank piping have been found to be necessary as apparently the foaming of the fat oil when subjected to such pressure reductions as these causes unusual carry-over conditions in the vent tanks. The loss of absorption oil by carrying over from the absorbers has proven to be much less than that generally anticipated, and as a matter of fact, is nil when the absorbers are provided with efficient mist extractors above the top tray.

Distillation Equipment

Perhaps the most unusual feature of the Coastal Recycling Corp.'s distillation unit is the direct-fired fat-oil heaters, which preheat the oil entering the primary still to 580° F. without noticeable cracking. These heaters are designed to maintain uniform firebox temperatures in the order of 1,300° F. throughout to insure against localized heat input and high skin temperatures. Relatively high oil velocities through the heaters also tend to reduce excessive temperature variations from the center of the tube to the tube itself.

The remainder of the distillation unit consists of a primary still operating at 35 lb. pressure, the overhead product being end point-specification motor fuel, a secondary still operating at 5 lb. pressure, producing a specification kerosene overhead, and a stabilizer unit controlling the vapor pressure of the motor-fuel stream.

The distillation unit has shown that no unusual conditions are encountered in removing heavy distillate fractions from absorption oil with the exception that the temperatures involved are naturally higher than encountered in the usual natural-gasoline-plant distillation system. The quantity of stripping steam required in the primary still varies with both the still pres-

sure, oil-inlet temperature, and the degree of fractionation required between motor-fuel end point and kerosene initial.

Compressors

Probably one of the most noticeable surprises to one only giving casual thought to the pressures involved, is the fact that compressor-packing leakage and compressor-rod wear are no greater than that experienced under normal low-compression conditions. This is due mainly to the design, materials used, and number of rings in the packing case and the system of lubrication; however, the quantity of lubricating oil required at this point is somewhat in excess of that required for low-pressure conditions.

The compressor valves require only the normal attention and give little or no trouble providing all suction lines are thoroughly cleaned of all welding "tears" and foreign material by swabbing and blowing to the air before passing gas through them to the compressor cylinders.

Piping

Another problem warranting careful design and consideration is the high-pressure gas and oil piping so as to take care of expansion and still eliminate vibration. On the compressor main suction and discharge headers, a system of fixed central anchors, slip-type intermediate anchors limiting the pipe to longitudinal movement only, and horizontal expansion loops have apparenly answered this problem exceptionally well. All piping for services such as this should be located aboveground for ready inspection and painting. Likewise, the individual compressor cylinder piping inside the compressor building should be in readily accessible trenches, and should be rigidly braced with thrust plates against the sidewalls and bottom of the pipe trench.

The field piping necessarily must be buried in farming areas, and due to the sudden temperature changes involved in starting up and shutting down, it has been generally assumed that line slack should not be depended on for expansion and contraction, but rather this condition should be taken care of by horizontal or vertical expansion bends. If horizontal bends are used, they should be located in concrete boxes to permit unrestricted movement.

Cooling System

Water conditions in the South Texas area are particularly bad from the standpoint of excessive sodium and calcium chloride content, and therefore all cooling systems are of the closed type and all exhaust steam is condensed. The engine-jacket water system makeup is supplied by condensed steam, and therefore, the only water requiring serious treatment is the boiler feed-water makeup and cooling-tower makeup. Pyrochrom glucosate and quachrome glucosates have been used with considerable success for these makeup-water treatments.

The Corpus Christi Corp. uses a down-draft type of cooling tower whereas both the Coastal Recycling Corp. and Gulf Plains Corp. use the induced-draft type with the fans located on top of the tower, which expels the hot air vertically at considerable velocity, removing the hot humid air from the plant-operating area and cooling tower.

With unusually bad water conditions prevailing, the economics of electrically driven pumping equipment versus steam favored the former, since it would have been necessary to run all equipment condensing to reduce the quantity of boiler-makeup water to a minimum. This, in turn, required an unusually large cooling tower and water-circulating equipment. Again, condensing steam in atmospheric sections in a cooling tower meant the evaporation of considerable quantities of cooling water and the deposition of serious quantities of scale on the condenser tubes, even though an expensive water treatment was used.

Electrically driven equipment having therefore been decided upon affected the selection of the type of cooling tower. The additional load on the electric generators to drive cooling-tower fans being small compared to the total connected load, it did not affect the generator installation and therefore, the induced-draft cooling tower involved a smaller investment than the larger natural-draft tower.

The flexibility of this type tower has proven of considerable worth in attaining uniform plant condensing and cooling operation, as the number of fans in operation are varied in accordance with the temperature conditions required.

Operation and Completion of Input Wells

Much has been said in regard to the location of the input wells on the structure. There are primarily two locations for these: (1) On the flank, and (2) on the top of the structure. Both schools of thought have their merits; however, the particular structure under consideration is really the deciding factor in this matter as the sand thickness and sand conditions such as porosity, permeability, uniformity, and edge water, etc., all vary in different structures and must be studied as individual cases.

Direct-fired heater for enriched oil

In general, however, input wells should have the maximum possible sand thickness, permeability and exposed sand face to reduce the pressure necessary to return the dry gas to the formation. The completion of these wells for maximum gas return is also of prime importance, and by underreaming through the sand, by cementing above the pay only, and by using either very open screens or numerous shots has proven to be very beneficial in this respect.

Input wells and the formation around them from the top to the bottom of the hole attain considerable false temperature from the hot compressed gases and therefore should it be necessary to shut a plant down or shut in a particular input well, for any considerable time, it is important to pay close attention to the cooling off operation so as not to place too great a strain on the long string. This is especially so in the case where a fuel hole cement job has been used.

Well Pattern and Withdrawal and Return Rates

Too strong an emphasis cannot be placed on the necessity of a careful study of the location of input wells with reference to producing wells, the individual well rates of withdrawals and the rates of return and the total rate of withdrawal and return for the entire project. Failure to do this will undoubtedly result in channeling, premature drying up of producing wells close to input wells, the necessity then of drilling additional wells to process "edge" gas that has been channeled past and in general, disappointing returns on the investment.

Accurate analytical and graphical records should be kept continuously of the position of the return dry gas in the formation. To do this, it is necessary to have complete geological information on the structure as it involves corrections for variations in porosity, permeability, uniformity, areal extent of the productive formation and pressure conditions. This coupled with a systematic system of testing the producing wells for dilution will enable the operator to balance the "take" and input rates so that he can forecast and correct these rates to the end that the entire structure will produce the maximum percentage of the original reserves.

Compressor room showing five eight-cylinder engines in a row

Cast Iron pipe used in spray pond of prominent Illinois refinery...

UNDER all but the most rigorous of corrosive conditions, cast iron pipe is a dependable ally in keeping down the cost of plant maintenance per barrel of crude. Performance considered, its first cost is low—its cost per service year the lowest. It is available in bell-and-spigot, plain and threaded ends, and flanged types, or with stuffing-box type mechanical joints, in diameters from 1¼ to 84 inches. Address inquiries to The Cast Iron Pipe Research Association, Thomas F. Wolfe, Research Engineer, 1015 Peoples Gas Building, Chicago, Ill.

CAST IRON PIPE

For Longer Life and Economy

Application of Superheated Steam to Combination-Unit Prime Movers

By A. E. HARNSBERGER
Pure Oil Co.

ABSTRACT

This paper summarizes an investigation made by a refiner on the best method to meet the power requirements of a 25,000-bbl. crude-charging-capacity combination unit. It was necessary to adapt the installation to meet the limited steam-production facilities in an existing plant.

The investigation revealed the practicability of generating steam from waste heat. By superheating the steam to the largest power-consuming units, and by condensing the steam from these units under vacuum, it was possible to reduce the steam requirements and make a boiler-house extension unnecessary. The paper gives operating data showing that original design expectations are being achieved.

COMBINATION cracking units of large capacity, involving as they do heavy pumping loads, present a power problem to the refiner. This is particularly the case in refineries in which the capacity of the unit represents a major fraction of the crude throughput. In the case under discussion it was necessary to take care of the power requirements of a unit having a crude-oil capacity of 25,000 bbl. per day. It was necessary also to maintain operation of existing equipment over the trial period of the new unit.

The additional power requirements of the new operation were analyzed as follows:

	Horsepower
Hot-oil pumps above 200 hp.	2,000
Hot and cold-oil pumps below 200 hp.	1,200
Water circulation and forced-draft cooling	850
Total	4,050

The simplest solution to the problem would have been the purchase of the additional power. However, completely satisfactory continuity of service, particularly under southern climatic conditions, cannot be expected and, in addition, a lower-cost form of power was considered necessary for economical operation. Excellent results with gas or diesel engines for cracking-coil feed-pump drives have been obtained, but in this case such equipment was not considered because of the large horsepowers involved.

Steam-power drive offered attractive possibilities. Its reliability is well known, being subject to a minimum of interruptions. It also allows a maximum of flexibility, permitting easy variation of pump performance to suit conditions, with a minimum power loss because of throttling—a condition that hardly can be avoided in the case of constant-speed electric drives.

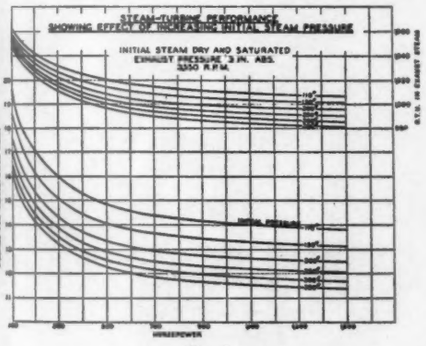

STEAM-TURBINE PERFORMANCE
SHOWING EFFECT OF INCREASING INITIAL STEAM PRESSURE
INITIAL STEAM DRY AND SATURATED
EXHAUST PRESSURE 3 IN. ABS.
3350 R.P.M.

Fig. 1

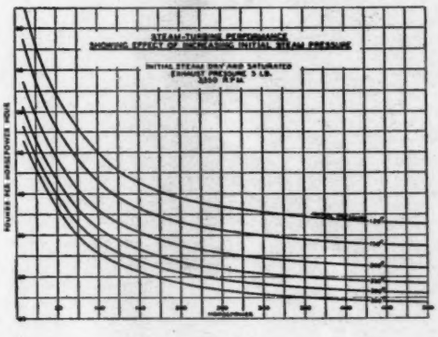


Fig. 2

The boiler plant of the refinery was carrying a load near its normal maximum at the time the new unit was decided upon. Its enlargement was not desired in view of future plant operations. Attention, therefore, was given to steam generation on the unit by means of waste heat. Our experience with waste-heat generation, which dates back for many years, has been very satisfactory. In the early installations the generation of steam was limited to the order of 50 lb. pressure because of low waste-heat temperatures. However, on later installations, involving high-pressure fractionation, generation at pressures up to 150 lb. has been found to be entirely practical.

The heat balance of the unit showed that a generation of 42,000 lb. per hour was possible. It was decided to apply this power to pump drives—supplementing, as needed, either with steam from the refinery boiler plant when available or by purchased electricity. Maximum brake-horsepower development with this quantity of steam was desirable for the following reasons:

1. To permit, if possible, the unit to operate on self-generated steam only.
2. To reduce condensing-water requirements.
3. To reduce operating costs.

A.P.I. **—Presented before midyear meeting of the A.P.I., Refining Division, Fort Worth, Tex., May 29-30, 1940.**

Economy could be obtained by:

1. Raising initial steam pressure.
2. Superheating the steam.
3. Vacuum condensation.

Effect of Pressure

The effect of pressure on the steam rate of both condensing and noncondensing turbines is shown in Figs. 1 and 2. It will be noted that decided savings in steam are possible. However, under the conditions being discussed, an increase in pressure results in decreased brake-horsepower production because of rapid decrease in steam generation, as illustrated in Fig. 3. This is accounted for by the decreased amount of heat available in the hot oil at higher steam temperatures. Generation of steam at 125 lb., gage, was decided upon.

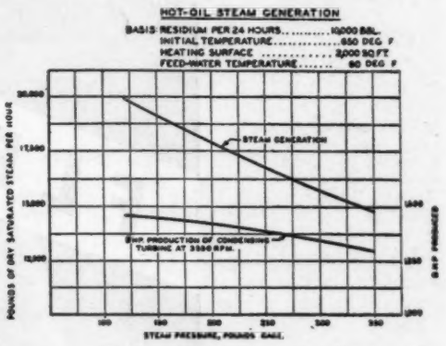

HOT-OIL STEAM GENERATION
BASIS: RESIDUUM PER 24 HOURS.....10,000 BBL.
INITIAL TEMPERATURE.....650 DEG F
HEATING SURFACE.....2,000 SQ FT
FEED-WATER TEMPERATURE.....60 DEG F
STEAM GENERATION
B.H.P. PRODUCTION OF CONDENSING TURBINE AT 3350 R.P.M.
POUNDS OF DRY SATURATED STEAM PER HOUR
B.H.P. PRODUCED
STEAM PRESSURE, POUNDS GAGE.

Fig. 3

Effect of Superheat

The effect of superheat on both condensing and noncondensing turbines is shown in Figs. 4 and 5. It will be noted that decided savings are possible, the direct result being decreased steam-generator or boiler capacity for a given load. In addition, there is a worth-while overall heat economy, as shown in Fig. 6. In Fig. 6 is illustrated heat input to a separately fired superheater, and the extent to which this heat is offset by saving in heat input to boilers. Superheat also greatly reduces turbine-blade erosion, a serious factor when moisture

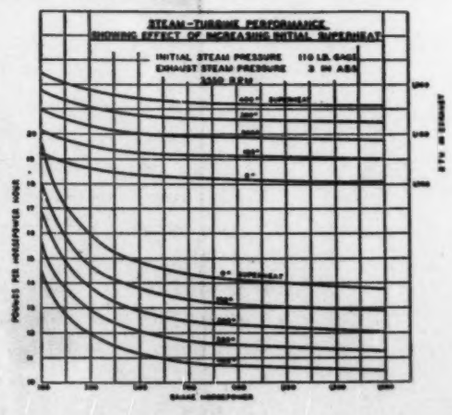
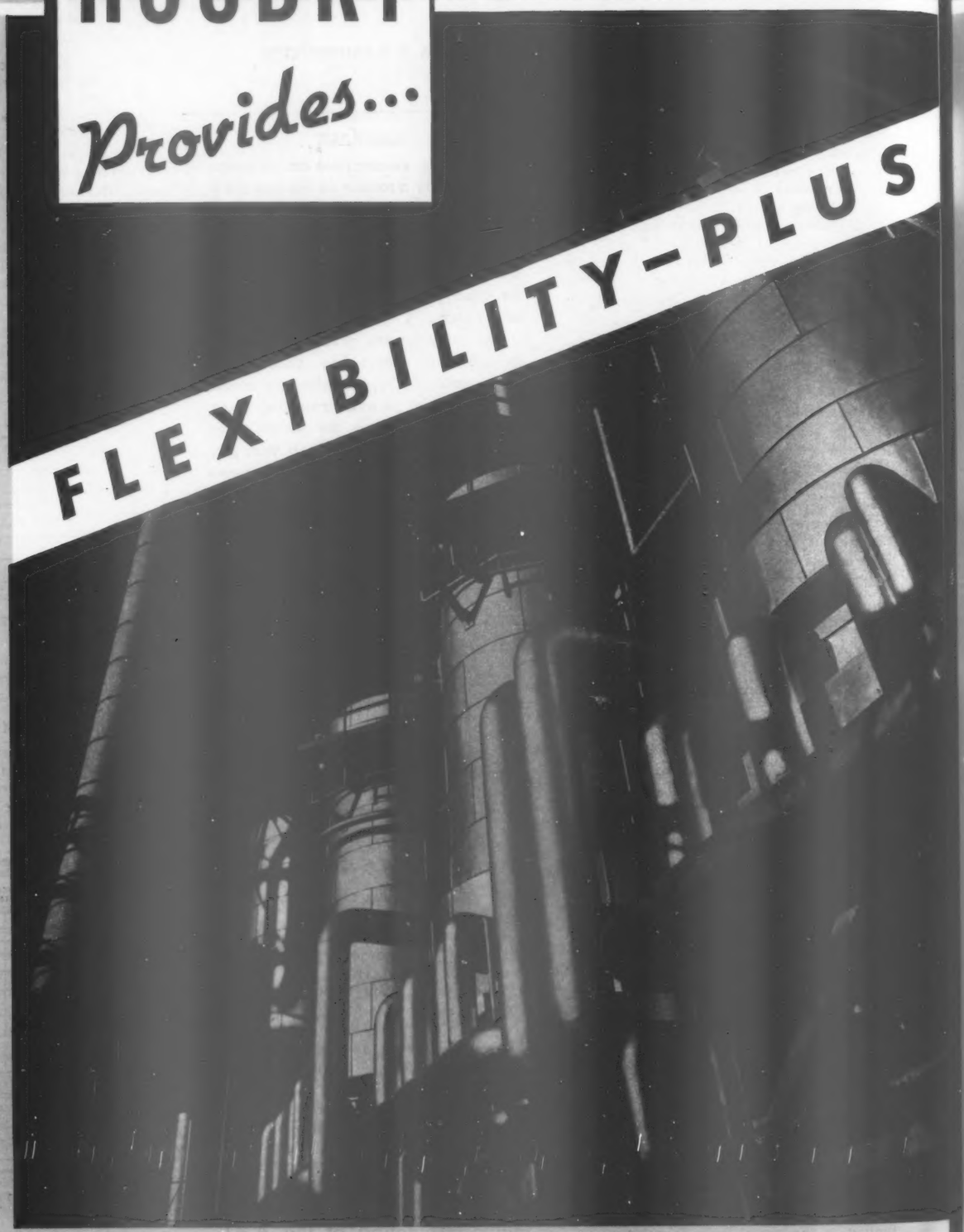


Fig. 4

HOUDRY

Provides...

FLEXIBILITY–PLUS



HOUDRY PROVIDES FLEXIBILITY—PLUS

YIELDS CAN BE VARIED

between { HIGH GASOLINE *and* LOW FUEL OIL } *or* { LOW GASOLINE *and* HIGH FUEL OIL }

To meet an ever-changing market the Houdry Catalytic Cracking Process brings to the refiner a remarkable flexibility. At all times there is produced a high octane motor or aviation gasoline, but the production of fuel oils, household or bunker, can be varied over wide limits to meet the market.

The experience of ten operating units, charging a wide variety of stocks and meeting widely different markets, is proof of the remarkable flexibility of Houdry Catalytic Cracking.

Licensing Agents for the Houdry Catalytic Cracking Process

E. B. BADGER & SONS CO.

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Engineers and Contractors
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content of steam is high. Superheat of 300° F. was decided upon.

Effect of Vacuum Condensation

As shown by comparison of charts, vacuum condensation will reduce by more than half steam consumption for a given power. Three inches of mercury absolute condensing pressure was chosen because of 90° F. water temperatures during summer seasons, and to restrict water consumption to a reasonable figure.

The driving turbines of the following pumps were selected to operate on superheated steam and condensing:

	Hp.	Water rate (lb. per b.hp. per hour)	Steam consumption (lb. per hour)
1. Clean recycle oil-furnace charge	1,000	11.5	11,500
2. Viscosity-breaker oil-furnace charge	450	12.2	5,500
3. Gas-oil oil-furnace charge	275	13.2	3,650
4. Reformer oil-furnace charge	275	13.2	3,650
Total	2,000		24,300

As the estimated steam generation was 42,000 lb. per hour, this left 17,700 lb. per hour for miscellaneous smaller noncondensing pump drives, processing purposes, and air-removal jets. A number of the noncondensing pump drives were arranged for dual steam-electric operation, both because of flexibility and for the purpose of guarding against electric-power failure.

There follows a brief description of the essential equipment installed:

Waste-heat steam generator.

The type of steam generator adopted is unique. It consists of a horizontal drum in which is held a constant water level by the feed-water pump. Ranged alongside in vertical position are six tubular exchangers, the shell sides of which are connected to the drum. Water is fed from the drum into the lower section of the shells, the circulation being thermosiphon. Recycle oil, topped crude, and residuum are pumped through the exchangers. After 18 months of operation this waste-heat generator has proved to be entirely satisfactory, operating with a minimum of trouble and expense. The feed water is zeolite-treated to zero hardness, resulting in freedom from scale deposits on the outside of the tubes. The inside of the tubes of the exchanger, which operates on 10-gravity residuum, requires the most cleaning. Cleaning periods of these tubes average 6 months. Cleaning is accomplished by blowing close-fitting rubber stoppers through the tubes by the use of compressed air. Sectional elevation of the generator is shown in Fig. 7; plan, in Fig 8.

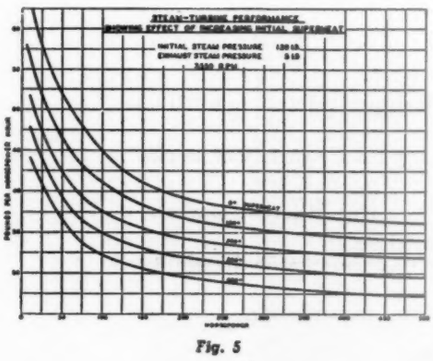

Fig. 5

HEAT SAVING BY SUPERHEATING
BASIS: INITIAL STEAM PRESSURE ..... 110 LB.
SUPERHEAT ..... 300 DEG F
ABSOLUTE CONDENSER PRESSURE ..... 3 IN. MERCURY
BOILER & SUPERHEATER EFFICIENCY ..... 75 PER CENT
TURBINE R.P.M. 3600
HEAT SAVING AT BOILER PLANT
HEAT TO SUPERHEATER
BTU PER HOUR
BRAKE HORSEPOWER OF DRIVING TURBINE

Fig. 6

Steam superheater.

Several methods of superheating that portion of the generated steam to be consumed by the condensing turbines were considered. At first, thought was given to utilization of waste heat in the flue gases from the clean-oil heater. The estimated cost of utilizing this heat was high because of the large amount of surface required. Also additional draft was required, resulting in a greater stack height. Furthermore, the possibility of tube failures necessitated temperature-control features to prevent excessive steam temperatures. As a result of this study it was decided not to use waste flue gas as a source of superheat, but to install a separatively fired unit.

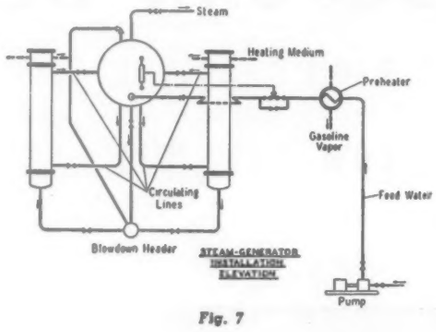

Fig. 7

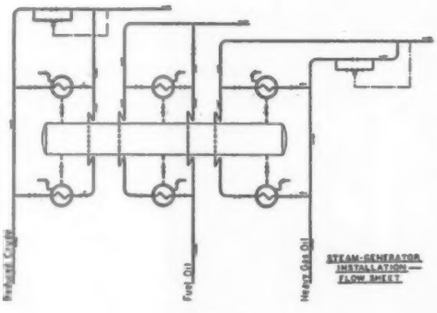

Fig. 8

Turbines.

Turbines operating on superheated steam are standard units fitted with cast-steel governor-valve bodies and nozzle rings, monel-metal blading and monel-trimmed governor valves. Governing and variable-speed control are through oil-pressure relays.

Condensing equipment.

Individual barometric jet condensers were decided upon for each turbine-driven cracking-coil feed pump. An investigation showed that this type of installation would not cost any more than a central system consisting of a single condenser, and would have the following advantages:

1. Simplification of exhaust-steam piping, eliminating the necessity for a large header inside of the pump room.

2. Better year-round vacuum because of less difficulty with air leaks.

3. Elimination of water-seal valves in exhaust lines.

4. Any derangement of the condensing system would affect only one unit rather than all units.

Operating Performance

Data recently taken at the plant from the installation operating under average conditions show the following performance:

1. Cracking-plant throughput, bbl. of crude oil per 24 hours	25,740
2. Steam produced from steam generators at 128 lb., gage, pressure:	
(*a*) From fuel oil (lb. per hr.)	16,100
(*b*) From reduced crude (lb. per hr.)	9,200
(*c*) From cycle oil (lb. per hr.)	14,100
Total (lb. per hr.)	39,400
3. Steam to superheater:	
Volume (lb. per hr.)	26,400
Pressure in (lb.)	125
Pressure out (lb.)	122
Temperature in (°F.)	353
Temperature out (°F.)	645
4. Excess steam to noncondensing units and for processing ((lb. per hr.)	13,000
5. Average condensing vacuum (in. mercury, absolute)	3¼
Condensing-water inlet temp. (°F.)	68
Condensing-water outlet temp. (°F.)	99
Condensing-water consumption (g.p.m.)	1,840

Conclusions

As a result of this installation, the following conclusions have been reached:

(*a*) Steam generation by means of waste heat is a thoroughly practical procedure on oil-processing units.

(*b*) The first cost of such generating equipment will run as low as one-third of the first cost of boilers for an equal capacity.

(*c*) Although generation at high pressures is practical, pressures in the order of 125 lb. will give greater utilization in most cases.

(*d*) Superheating of the steam consumed by prime movers, both condensing and noncondensing, is an economical procedure—both from the standpoint of first cost, and of operating costs and maintenance.

(*e*) When barometric jets are used, individual installation for each condensing turbine offers definite advantages.

BOOKS

A STRUCTURAL SURVEY OF NORTHEASTERN STANLEY COUNTY, SOUTH DAKOTA. By John Paul Gries, 65 pp., University of South Dakota, Vermilion, S. D.

This report is an official Report of Investigations (No. 34) by the state Geological Survey, and it deals with a structural reconnaissance along the Missouri River and some of the principal branches to the northwest of Pierre.

The outcropping formations are all in the Pierre shales of which the Oacoma zone of the Sully member forms the best key horizon. This zone is bentonitic and the lowest micaceous bentonite is sufficiently persistent to serve as a key bed.

The structures have a general northwest-southeast trend and several anticlines with from 10 to 30 ft. of closure have been mapped.

Nearly all of the artesian wells drilled in Stanley County have produced small quantities of gas which comes from several streaks between the Pierre shales and the Dakota sandstone at a depth of from 1,500 to 2,000 ft. Some of the gas is wet gas, containing in an average sample about 25 per cent of ethane and higher hydrocarbons.

The author considers that the best chances for oil are in the Minnelusa (Pennsylvanian) and Pahasapa (Mississippian) formations, lying below 2,600 ft. Tar shows were also reported in the Minnekahta (upper Permian) limestone.

KELLOGG CATALYTIC POLYMERIZATION

The M. W. Kellogg Company is prepared to show the individual refiner the economic advantages of a Kellogg-Polyco Catalytic Polymerization installation.

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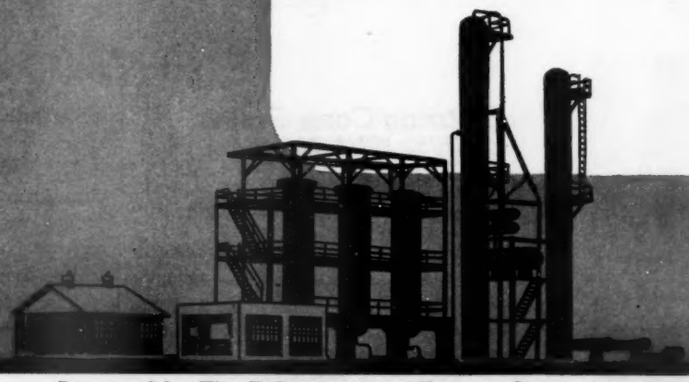
Kellogg-Polyco Units incorporate equipment simple in design, inexpensive to install and easy to operate. Often, Kellogg-Polyco Units require no increase in supervision costs. They are the solution to many problems faced by the refiner today.



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Prize Winning Kinks At N.G.A.A. Meeting

OPERATING ideas developed by men connected with the manufacture of natural gasoline were presented as an important feature of the annual convention of the Natural Gasoline Association of America. The entire program for the last day, May 17, was given over to discussing them in the "Kinks" session. Prizes were awarded by the association according to classification for different phases of plant operation such as engines, controls and miscellaneous operations. A number of the prize-winning kinks appear here. In early issues additional kinks will be published which have been selected from those receiving prizes and honorable mention.

Easy Packing Puller

FIRST PRIZE, CLASS A

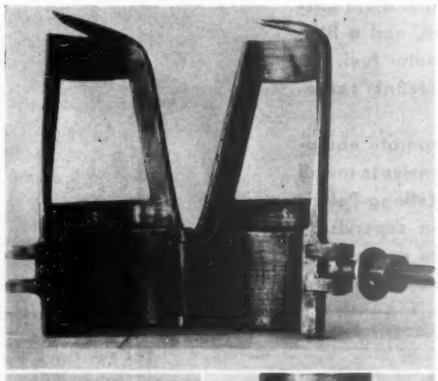
HUGH T. GREINER, roustabout
Gulf Oil Corp., Seminole, Okla

This packing puller removes packing from rods and plungers of engines and pumps which use nonmetallic packing.

The packing puller is made of steel; it consists of a body, which is split into two pieces and hinged on one side. The other side has a fastener so that the tool can be firmly fastened around the rod or plunger. On one end of the tool there are two barbs or hooks. These barbs are very sharp and are made in a curving manner. A spanner wrench is furnished with the packing puller to facilitate turning the barbs into the packing more easily.

The easy packing puller is a simple and quick means of removing packing. After the engine or pump has been shut down, the rod or plunger is set so as to be about half way through the stroke. Directions for using this device are as follows:

After the packing gland has been removed,



place the packing puller around the rod or plunger, with the barbs pointing toward the packing, then close the fastener just enough to hold the packing puller on the rod or plunger. Then slide the packing puller along the rod or plunger until the barbs are against the packing. Press the packing puller so the barbs are firmly against the packing and at the same time turn on the rod so that the barbs are thrust into the packing. In some cases when the packing is very tough, the spanner wrench is used to turn the packing puller. After this has been done and the operator is sure the barbs are well into the packing, the fastener is used to tighten the packing puller on the rod or plunger. Then the rod or plunger is moved away from the packing gland. This is done by turning the flywheels on engines, or by using a bar or other means in case of pumps. This action causes the packing puller to move with the rod or plunger, bringing the packing which is fastened on the barbs out of the packing gland. The packing is easily removed from the barbs by turning it in the direction opposite to that used to insert the barbs. The operation is repeated as many times as is necessary to remove all rings of the packing.

This is an easy and efficient way to remove packing. When engines and most pumps are shut down, they are usually hot and it is an unpleasant job to remove the packing. The packing puller eliminates much personal contact with the packing. This also makes a much cleaner job of it. Sometimes the packing is burned or hard so that it cannot be pulled, but must be removed in small pieces. In a case of this kind, the packing puller is turned around and around on the rod or plunger until the barbs cut or break the packing into small pieces. This is much quicker than jerking out small pieces with ordinary packing hooks. This tool has many advantages and will pay for itself on one or two difficult packing jobs.

Bearing-Cone Puller

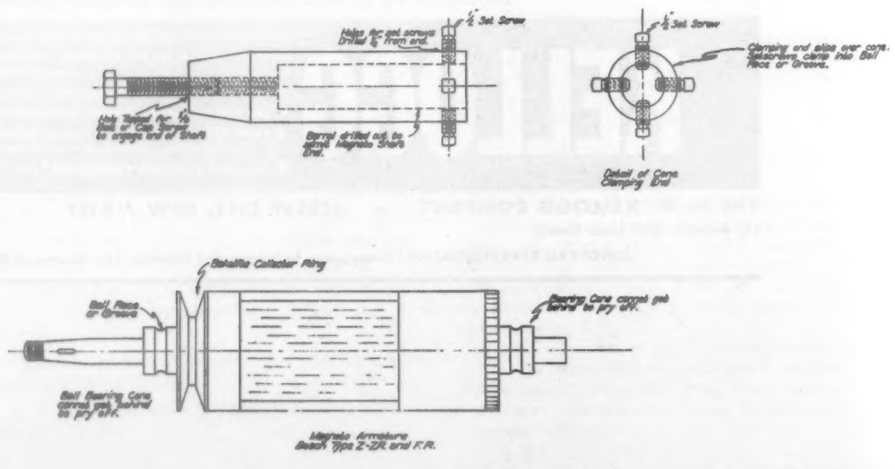
THIRD PRIZE, CLASS A

W. R. RYAN, electrician
J. E. Crosbie, Inc., Fittstown, Okla.

The bearing cones on Bosch magneto armatures fit up against the Bakelite collector ring on one end and against a gear on the other end. There is no way to get behind them to pry them off unless one breaks the collector ring or damages the teeth of the gear.

The puller was made from a 1-in. hydraulic nipple 8 in. long, cut in half. The hole in the nipple is the correct size for a ⅝-in. tap for the jack screw. The other end was drilled four-fifths of its length to take the armature shaft. This is 1 in. in diameter.

Four holes were drilled diametrically opposite and tapped for ¼-in. set screws, about


½ Set Screw
½ Set Screw
Detail of Cone Clamping End
Bakelite Collector Ring
Ball Races or Grease
Magneto Armature Bosch Type Z-ZK and F.R.

Operating Kinks Meeting

¼ in. back from end. When the bearing-cone puller is used these are set with a firm grip on the groove or ball race on cone of the magneto armature.

•

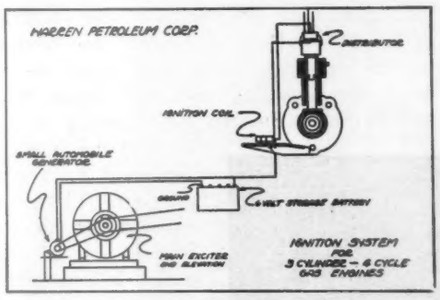
Ignition System

FOURTH PRIZE, CLASS A

W. H. WILLIAMS, plant superintendent
Warren Petroleum Corp., Graham, Okla.

This installation consists of an automobile coil, distributor, battery, V-belt, and generator. The generator is equipped with an automatic relay or cutout and is preferably air-cooled. Also, a bracket is necessary to mount the distributor.

This replaces a magneto on an upright three-cylinder Reeves gas engine, which pulls a 75-kw. generator and a belted exciter. The generator is mounted on a bracket in line with the pulley on the exciter, which



is grooved near the outside edge for a V-belt. The battery is installed near the base of the engine and the coil mounted on the magneto bracket with a small knife switch between the battery and coil. The cam on the distributor is filed so that the point will break at the desired point for firing. The battery is grounded to the engine to complete the circuit.

The shaft driving the distributor is notched so that the distributor shaft will fit and a set screw is used to hold the distributor in place. To advance or retard the magneto it is necessary to loosen the set screw and adjust as desired. The gear driving the shaft is a bevel gear geared to the old magneto gear.

This installation at present is being used on a second engine and one generator is all that is necessary to keep the battery for both engines fully charged.

This installation may be made for very little more than the cost of repairing one magneto. A great saving in expenditures for points is also noticed.

•

Tank Pressuring With Flue Gas

FOURTH PRIZE, CLASS B

JOHN L. BOYD, chemist
E. A. THOES, superintendent
Shell Oil Co., Inc., Orlando, Okla.

Very often, if residue gas is used for pressuring tanks of natural gasoline or butane, a considerable amount of the lighter hydrocarbons is reabsorbed. Consequently the properties of the products cannot be maintained and this frequently results in their rejection.

Use of air for pressuring avoids this difficulty but it is a dangerous practice. Tanks almost empty of liquid are liable to contain an explosive mixture which may be set off by static electricity or by oxidation of sulfides.

We suggest the use of flue gas for the elimination of these difficulties. The flue gas would be low in oxygen content thereby reducing explosion hazard, and would have no effect on the properties of the finished products. No drawing is considered necessary as the small compressor normally used for pressuring the tanks with air could readily be connected to one of the plant boiler stacks and take suction from that source.

•

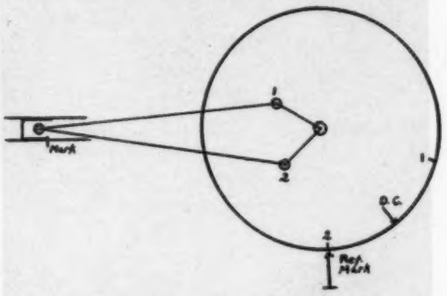
Locating Dead Center of An Engine

CLASS D

B. O. HERBISON, chief engineer
Parade Gasoline Co., Inc., Overton, Tex.

In order to time an engine properly, it is important that the exact dead center be accurately determined. A method for accomplishing this is described as follows:

Turn the engine about 30-40° from the approximate inner dead center and mark the



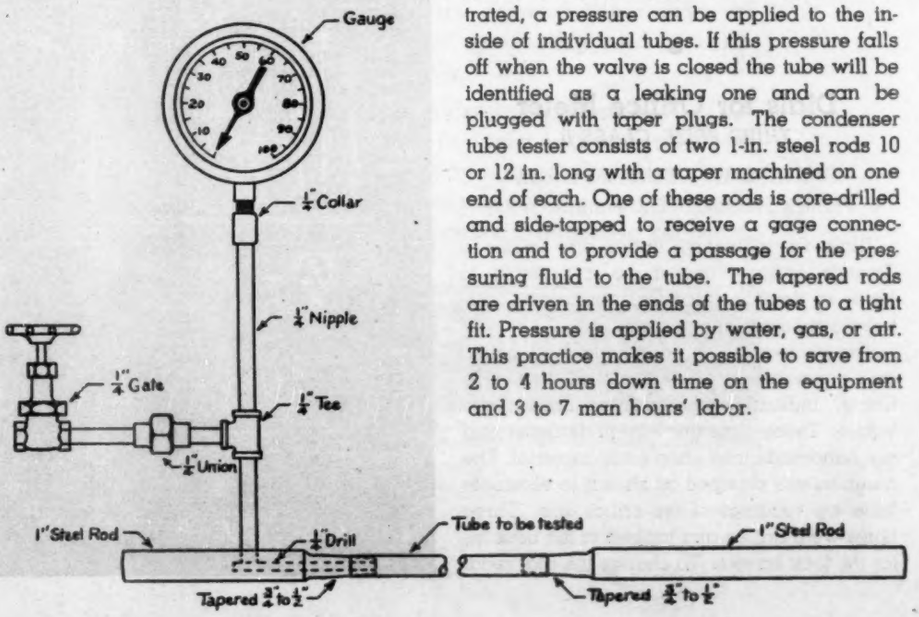
flywheel opposite some fixed reference point; at same time mark the position of the slide on the cross head. Then turn engine back through inner dead center until the marks on the slide and the cross head coincide again; make another mark on the flywheel at the same reference point. When a point halfway between the two marks on the flywheel is opposite the fixed reference point the engine is on exact dead center.

•

Condenser Tube Tester

SECOND PRIZE, CLASS D

HARVEY MILLER, repairman
Phillips Petroleum Co., Oklahoma City, Okla.



Often it is difficult to pressure the shell of a condenser, preheater, or superheater to identify leaking tubes, when the operating unit has been shut down for repairs. By means of the condenser tube tester as illustrated, a pressure can be applied to the inside of individual tubes. If this pressure falls off when the valve is closed the tube will be identified as a leaking one and can be plugged with taper plugs. The condenser tube tester consists of two 1-in. steel rods 10 or 12 in. long with a taper machined on one end of each. One of these rods is core-drilled and side-tapped to receive a gage connection and to provide a passage for the pressuring fluid to the tube. The tapered rods are driven in the ends of the tubes to a tight fit. Pressure is applied by water, gas, or air. This practice makes it possible to save from 2 to 4 hours down time on the equipment and 3 to 7 man hours' labor.

Fitting Thread-Leak Clamp

FOURTH PRIZE, CLASS D

ROY MAGERKURTH, machinist
Phillips Petroleum Co., Oklahoma City, Okla.

The fitting thread-leak clamp is an emergency clamp to be used to stop a leak developed in an ell or tee connection. Often a leak is developed at a place where it is necessary to shut down the plant in order to repair it. By means of this clamp a leak, developed on an ell or tee connection, can be stopped without shutting down, thus avoiding the costs of a shutdown.

This clamp consists of two 1 by 4 by 5-in.

iron plates cut into four sections in order to clamp around the pipe and be drawn together. The bore in each half of the clamp is beveled at the inner face to fit a 2-in. Dresser rubber gasket. By drawing the plates together with bolts the Dresser gasket is forced against the fitting and stops the leak. The plates are held together around the pipe by cap screws.

This clamp eliminates loss of production and premature shutdowns for repairs. This device makes it possible for a company to save several hundreds of dollars.

●

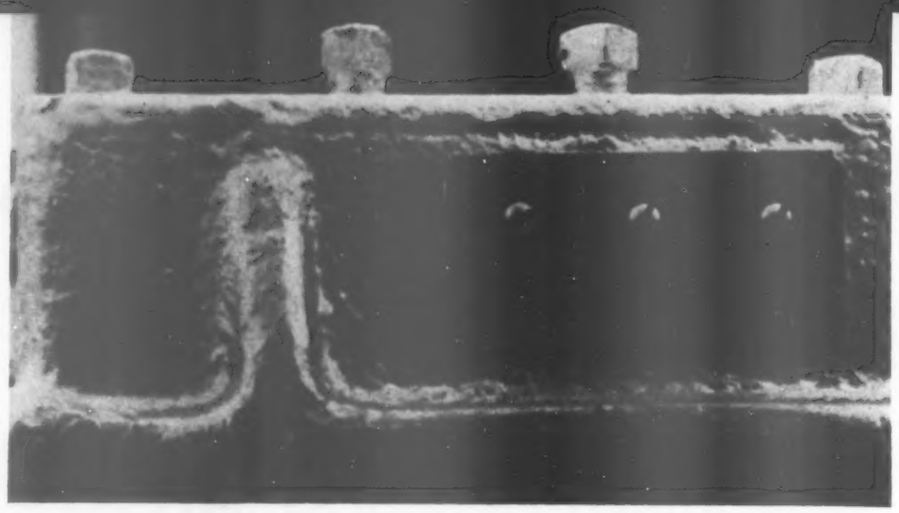
Dials for Orifice Meter

THIRD PRIZE, CLASS B

RICHARD W. WEEKS, meterman
Phillips Petroleum Co., Phillips, Tex.

Dials for indicating orifice size within a Daniels orifice fitting make it possible to have a flexible, practical, accurate, time-saving method without cost.

The photograph shows clearly the location and arrangement of the dials on the orifice fitting, indicating the correct orifice size within. These dials are 1 in. in diameter and are handmade from shop scrap material. The numbers are stamped as shown to eliminate false top readings of the orifice size. Three holes were drilled and tapped in the housing for the lock screws. To change the dial reading, the center lock screw is loosened and the dials rotated to the desired reading. The metal plate serves as a background for the dials.



This kink can also be easily installed on the meter-house door to show the orifice size when the meter flange is located high overhead or at a distance from the flow meter. More dials can be used to indicate larger plate sizes. This kink can be installed quickly.

The old method required a new stamped tag to be wired on for each plate change; this required time. The frequent misplacement of these tags required an orifice inspection. Also, a supply of tags of several sizes was necessary, and this was expensive. The photograph is of an actual installation on a 6-in. line with an orifice plate size 1.75 in., where this kink is in service, at a cracking furnace, Rice plant, Phillips Petroleum Co., Phillips, Tex.

●

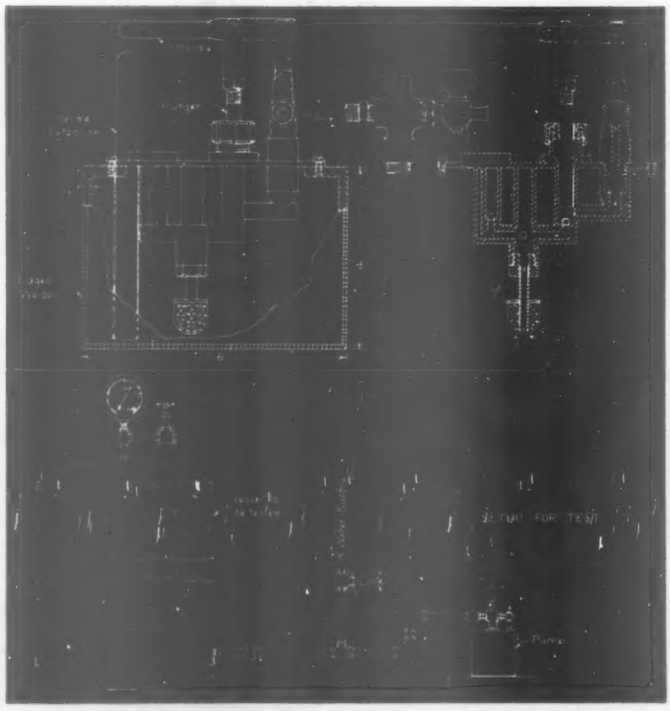
Hydraulic Pump for Hydrostatic Testing

FIRST PRIZE, CLASS B

ROY MAGERKURTH, machinist, Phillips Petroleum Co., Oklahoma City, Okla.

A convenient and easily carried pump to be used in making hydrostatic tests of tanks, liquefied-petroleum-gas containers, heat-exchanger shells, etc., can be made from a discarded pumping chamber of a force-feed lubricator.

A small metal box about 4 by 6 by 4 in. is made from light tank steel. The sight-feed chamber is plugged off with solder or babbitt and a bypass is drilled between the two parts leading to this sight chamber and plugged on the outside with solder. Two little ears are brazed to the back side of a ¼-in. brass tee to hold the lever-link pivot. A brass nipple is brazed into the side opening of the tee and the brazing machined to a flat shoulder. This is screwed into the discharge part of the pump. Into the other openings in this tee are screwed the copper-tubing connection and pet cock. A small lever handle, link, and plunger clevis complete the pump. The base of the handle is machined to the inside diameter of ¼-in. pipe. An extension handle is made from ¼-in. pipe. This extension handle is carried in a well in the fluid chamber made from ½-in. pipe. Pressures up to 2,000 lb. per sq. in. can be obtained by this pump.



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Building Oil Pipe Line Across Continental Divide

By WILLIAM G. HELTZEL

This is the third and final installment of an article that began in the May 16 issue. The second installment appeared last week.

THE locations, the distances between pumping stations, their elevations and the maximum elevations over which each station pumps are shown in the tabulation below:

Location of pumping station—	Elevation	Distance to following station (miles)	Highest elevation over which station pumps
Fort Laramie	4,224	95.69	7,260
Medicine Bow	6,683	95.92	7,320
Wamsutter	6,815	109.76	7,150
Granger	6,303	140.97	7,660
Salt Lake City	4,220		

Fort Laramie station, the property of the Stanolind Pipe Line Co., is a part of the line built in 1923 for moving crude oil from Wyoming to Freeman, Mo., where the line joins Stanolind's Mid-Continent trunk-line system. Since this station is in operation for pumping oil east, the Utah Oil Refining Co. arranged for Stanolind Pipe Line Co. to handle its receipts of Lance Creek crude oil from the Illinois Pipe Line Co. and pump the oil through Utah's line from Fort Laramie to Medicine Bow. In order to perform this service, Stanolind installed in its station a suitable high-pressure pumping unit and other facilities such as tanks and crude-oil piping systems. The pumping unit, the manifold piping, valves, fittings, and discharge lines at Fort Laramie station are designed for 1,800 lb. operating pressure. The pumping unit has a capacity of 5,000 bbl. per day at this pressure.

The other three pumping stations—Medicine Bow, Wamsutter and Granger stations, belonging to the Utah Oil Refining Co., are designed for maximum capacities of 10,000 bbl. daily at 1,200 lb.

Starting construction only 100 days before winter weather usually sets in, the completion of these stations, including machinery, tanks, buildings, piping systems, heating plants, and cottages within this period of time became a necessity. To facilitate the construction, all three stations were designed alike. The same type of equipment was selected for each station. Dimensions for the plans were chosen on the basis of using standardized construction materials to the best advantage. Likewise, a standardized set of procedures was used for the construction work. Instead of organizing three separate crews, one for each station—one large crew, with subdivisions organized for specialized work carried out the construction work for all three stations on a prearranged schedule. One small crew, supplied with the proper equipment, made all the excavations; another group of men followed up, making forms for the concrete foundations. The use of standard (4 by 8 ft.) panels of plywood board reduced the expense, as well as time for making the forms. One set of forms made for the foundations at the first station were used for similar foundations at the other two stations. For example, after using three sets of forms for 21 cottages, two complete sets are still in good usable condition. Insofar as possible, the dimensions of the foundations were adapted to the size of the panels. To save time and expense, portable power saws were used for sawing and cutting lumber, or the panels when necessary. As an example of the economy effected by this procedure, the labor cost per house for making the first set of foundation forms was less than $10. A small crew poured the concrete. Another unit of the organization erected the buildings, while a specialized crew erected the tanks under contract. In the meantime, a pipe-line crew was laying the piping systems and the machinists were setting the machinery. After completing its part of the work at one station, each group proceeded to the next station to carry on in the same manner. Since all groups were supplied with the necessary equipment and working on a properly coordinated schedule, rapid progress in the construction of these stations was made. Within 90 days the employes and their families had moved into their cottages and all three stations were ready for operating service. With winter weather on its way, only a few minor jobs were left to be finished.

The facilities at each of the three relay stations comprise two solid-injection diesel engines of 250 (sea level) hp. each.

These are five-cylinder, four-cycle, 400-r.p.m. engines, and are convertible to gas fuel. Each engine is directly connected to a 4½ in. by 16 in., 6,000-bbl. duplex pump with forged steel cylinders and designed for 1,200 lb. per sq. in. operating pressure.

Auxiliaries include, at each station, a 60-hp. gas engine and electrical generator, a rotary suction pump and a small air compressor. These facilities are housed in a steel frame building with transite roof and sides.

One or two steel tanks of 20,000-bbl. capacity for crude-oil handling and a concrete water cistern are at each station. Heat exchangers are used to cool the engine cooling water.

A suitable water supply for cooling the engines and for domestic purposes at the cottages was one of the unusual problems involved at Wamsutter and Granger stations. The nearest water supplies were deep wells on the Union Pacific Railroad. At Medicine Bow station, water suitable only for cooling and general domestic purposes was obtained from Medicine Bow Creek, but all the water for drinking and cooking purposes is hauled by truck from the town of Medicine Bow. At Wamsutter and Granger stations, 1 to 2 miles of water lines from the pumping station locations to the water supplies of the Union Pacific Railroad were required. Because of the extremely cold winter weather, the water could not be stored in tanks aboveground without freezing. Consequently, concrete cisterns with a capacity of 220 bbl. were built at each of these stations. At Medicine Bow station the cistern, 245 bbl. in capacity, was built with a partition wall so that about 215 bbl. of its capacity could be used for storing water to be used for general domestic purposes and the remaining storage capacity of 30 bbl. for drinking water. A domestic water-pressure system, used in connection with the cistern, eliminated the troubles that would have resulted from freezing if elevated storage tanks had been used.

On account of a limited water supply, only the closed cooling system, requiring small quantities of "makeup" water, could be used for cooling the engine water. Through the use of heat exchangers installed in the crude-oil suction system, the engine water is cooled by the crude oil passing through the suction system to the discharge pumps. A pressure-regulating valve installed in the suction piping between the receiving and the

Pipe line descending a mountain and approaching Weber River crossing near Devil's Gate, Morgan County, Utah. Because of very limited space it was necessary that the pipe line be laid along left edge of highway

tank lines is used to carry the necessary pressure on the suction piping system to overcome the friction loss of the crude oil passing through the heat exchangers and piping, and at the same time provide sufficient pressure to fill the pumps. At first there was some uncertainty as to whether the high viscosity of the crude oil during the winter months might reduce the heat transfer rate so low that heat exchangers would not be practicable under these conditions. The heat-exchanger equipment was installed and has proved very satisfactory. At Medicine Bow station, where oil is pumped out of the tanks as well as receiving the stream from Fort Laramie station, a booster centrifugal pump is used to pump the oil from the tanks into the suction-piping system, which is operated at 10 to 15-lb. pressure.

The remoteness of these stations from supplies and their isolation made it necessary to design for reliability of operation. Since only one man is used on each tour these stations were designed also for simplicity and compactness. Although only one of the pumping units is required for the present capacity of 6,000 to 8,000 lb., the second pumping unit serves presently not only for standby service or peak-pumping requirements, but can be used to meet any growth in the company's business. Since natural gas was available at Medicine Bow and Granger stations, the engines at these stations were purchased for gas-engine operation with the necessary features of converting them to diesel operation at a later date when it might become either necessary or desirable to change from gas to crude oil as fuel. Identical engines, except for their being diesel in operation, were installed at Wamsutter station.

Some of the interesting features of the pumps which have been designed for safe operations at working pressures of 1,200 lb. are solid forged steel cylinders, using ring-joint gaskets for all valve covers and on the discharge connections, totally enclosed self-lubricated power ends, the use of only eight wing-type suction valves, and a similar number of discharge valves with hardened steel seats, the use of high-tensile-alloy steel in the bolts and studs, and finally the unusual sturdy construction in the frame to provide safe frame loads for these higher operating pressures.

Metering

Because of long distances between pumping stations, large drainage areas due to large variations in elevation, inacessibility of certain sections of the line during the winter, high-pressure operations and unusual winter-weather conditions, extraordinary precautions must be observed in dispatching the oil, especially since linewalkers are not used for patrolling the line. To meet these conditions and to provide an accurate and prompt check on the movement of the oil from one station to another, orifice meters are used on the discharge line and displacement meters are installed on the low-pressure end or receiving line at each station. The displacement meter is also used on the incoming line at the refinery terminal. The useful application of the orifice and displacement meters has been described by the author in previous papers. A rate-of-flow recorder, used in connection with a displacement meter and installed on the instrument board of the engine room shows immediately any change in the rate of receipts from the previous station. The recording orifice meter, used on the discharge line for interpreting pressure drops, is used as an additional check for determining leaks or breaks promptly.

Notwithstanding rather wide variations in the temperature and the viscosity of the oil from month to month, these meters at the successive stations and at the terminal have checked closely with each other. After 6 months of operations through the winter months, this metering equipment has proved invaluable in dispatching the oil.

Operations

With 192 miles of line, representing the first three jobs, completed in approximately 60 days, and having impounded 220,000 bbl. of oil in storage tanks at Fort Laramie and Medicine Bow stations, the filling of the east end of the line was started promptly. A delay in the delivery of the permanent pumping equipment, caused by the increased activity in the industrial plants in the East after the European war started in September, made it necessary to start filling the line without the permanent equipment. A temporary portable pumping unit, already provided in anticipation of this condition, was put in service and oil was started into the line at Medicine Bow station on October 22. And by resorting to an expediency involving a rather unusual use of the pumping unit which was already in service at Fort Laramie station for delivering oil east through Stanolind's system, the filling of the line from Fort Laramie station was started 1 day later on October 23. Without portable equipment suitable for the high operating pressure being available, it was decided to use one cylinder on a 5½ in. by 24 in. triplex pump at Fort Laramie for pumping the Utah's oil west, leaving the other two cylinders, which had sufficient capacity, for pumping the oil requirements east through the Stanolind system. Fortunately this pump was equipped with a forged-steel fluid end, which permitted operating it up to pressures as high as 1,400 lb. Although there was some question about the gasketed joints withstanding the higher pressures, it was decided to proceed with the plan and this pump was adapted to meet this urgent necessity. After segregating one cylinder intended for use in pumping west, and connecting it with separate suction and discharge lines, the pump was put back in service, using two cylinders to pump approximately 22,000 bbl. of oil east at 700-lb. pressure and the third cylinder pumping approximately 5,000 bbl. per day west over the Laramie Range to Medicine Bow at a pressure of 1,250 to 1,350 lb.

Through these arrangements, Medicine Bow and Fort Laramie stations started filling the line west on October 22 and 23, respectively, and within 100 days from the date the first construction work started and after 30 days from the time the filling of the line began, crude oil arrived at the refinery on November 25, 1939. The entire line was filled and put in service without the loss of even a barrel of oil from line leaks or failures.

By the time the line was filled and the first delivery of oil made at the refinery, the permanent electrical-motor-driven pumping unit at Fort Laramie and the permanent machinery at the other stations had been installed ready for use. Some of it was already in service. Experience over the first 30 days in pumping all the way from Medicine Bow to Granger station at the required rate of deliveries showed that it would not be necessary to operate Wamsutter, the intermediate relay station, as long as the viscosity of the crude-oil stream continued at a reasonable figure. Since quantities of crude oil of low viscosities were to be continued as a part of the composite stream, Wamsutter station was not put in service. As explained previously, it was decided in the original planning to operate the pumping unit at Fort Laramie station under a high pressure, instead of installing a relay pumping station on the eastern slope of the Laramie Range about 40 miles away. As a part of the plan to eliminate this intermediate station, the friction loss and the pumping pressure were held to a reasonable limit during the winter months by adding Sundance crude, having a low viscosity, to the viscous Leo sand crude in an amount equal to about 20 per cent of the composite quantity. This provision for holding the viscosity of the stream within reasonable limits was an important factor in the plan since the hydraulic head or starting pressure at Fort Laramie station, without the intermediate relay station, was 1,100 lb.

Looking west across Lost Creek, Phillips ranch, Morgan County, Utah. Coating operation approaching a step downgrade

In this connection a problem encountered in the mixing of these crude oils should be mentioned. For the purpose of mixing these oils in exact proportions, two separate suction lines were laid from the tanks to the pump, so that the different crudes could be kept separately until after the proper proportions of each had passed through the pump and discharged into a common discharge line where they would be uniformly blended. The proportioning of the quantities of oil is accomplished in the pump by using one or more plungers or certain cylinders connected up to different suction lines. This same scheme was being used satisfactorily on another pump in the same station for moving a viscous crude east through another line. However, on account of additional transfers of oil at Fort Laramie station, room for the storage of two different grades of crude in individuall tanks was not available. Therefore, it was necessary to mix the crudes in a tank rather than in the

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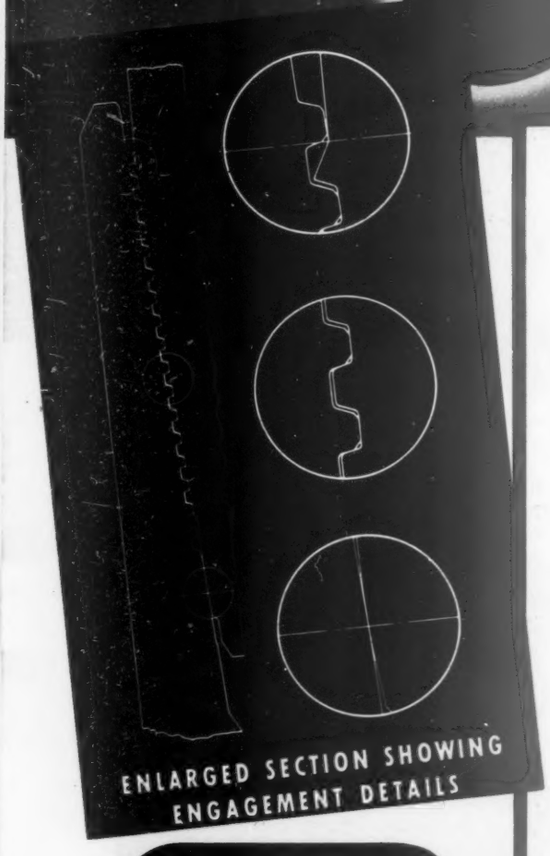

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2. **Elimination of pipe failure at the last engaged thread.**
3. **Elimination of galled pipe threads.**
4. **Elimination of the hazards of field welding.**
5. **Elimination of leakage and washouts.**

THE SHRINK THREAD DESIGN PROVIDES AN *Improved* PIPE to tool joint connection

with a number of advantages. Instead of a weakened section in the region of the last engaged pipe thread due to the notch effect of the conventional V-type thread, it has, as illustrated, a coarse square thread with the bottom of the last thread larger in diameter than the drill pipe. This effectively eliminates last engaged thread failures.

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Because the pipe threads are always in perfect condition and there is no bucking-on or welding the chances of improper field application are reduced to a minimum.

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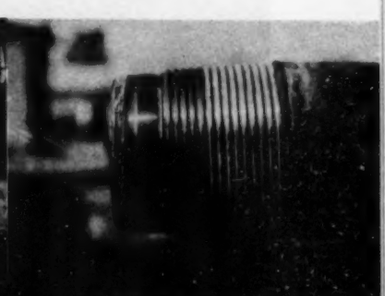
No threading lathe or bucking on machine is required for replacing these joints. The work is done quickly and economically on the location as shown in the accompanying illustrations.

Old tool joint is first cut in half at thickest section of metal.

A longitudinal cut is next made with a slot at end for inserting wedge.

Using wedge as a handle, the loosened joint is unscrewed.



Drill pipe after joint removal showing perfect condition of seal and threads.

Pipe threads are cleaned with an electric wire buffing wheel preparatory to applying new joint.

New tool joint is applied cold to drill pipe to gauge made-up position.

Cold position is gauged to establish a reference mark to indicate made-up position.

Made-up position is gauged by placing one end of the template at the "Cold Position" mark.

The joint is loaded in a portable furnace for heating to 650° F.

The furnace shown in closed position for heating joints.

The heated tool joint is freely screwed on the pipe to made-up position after which the assembly is cooled in the air.

A typical field application set-up during cold or windy weather. A tent is always carried for such conditions.

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Weber River crossing near the Devil's Slide, Utah

pump. Because of the slow rate of pumpings, 40,000 to 50,000 bbl. of the mixed oil stored in a 55,000-bbl. tank would last for 20 to 25 days. In this period, especially during the cold weather, the oil stratified into layers of crude having variations in viscosities. Although no serious problem was encountered, the bottom layer was most viscous and consequently, special care was observed to keep this oil out of the line, by not lowering the liquid level in the tank too low. This experience indicated that after mixing oils in a large tank stratification may occur at low temperatures.

The following table shows the minimum and maximum operating pressures at the three operating stations during the months of January and February 1940:

	Fort Laramie		
	Pressures		
Month—	Max.	Min.	Av. bbl./day
January	1,275	1,470	2,021
February	1,315	1,585	3,578
	Medicine Bow		
	Pressures		
Month—	Max.	Min.	Av. bbl./day
January	315	615	5,810
February	460	625	6,233
	Granger		
	Pressures		
Month—	Max.	Min.	Av. bbl./day
January	600	645	5,806
February	615	690	6,233

The temperatures of the oil passing through the various stations are shown in Table 1. It is noteworthy that the lowest temperature of the crude oil pumped through the line was 30° F. at Medicine Bow and Granger stations. It is believed that this figure would represent the average ground temperature 20 to 24 in. below the surface along the course of the line across the Continental Divide. It is significant also that subzero atmospheric temperatures over the period of a week lowered the temperature of the oil moving through the line only 2 to 4 degrees. The higher temperature of the oil arriving at Salt Lake City reflects the higher ground temperatures in the Salt Lake Valley through which the line is laid for 24 miles. The low temperature of the oil stream at Fort Laramie, the initial station, is caused by the oil being exposed in tanks to low atmospheric temperatures before being pumped into the line.

At Fort Laramie station, Lance Creek crude (Leo sand) is transferred from the Illinois Pipe Line Co. to Stanolind Pipe Line Co. for pumping through the Utah's line to Medicine Bow station, where additional crude oil from the Rock Creek and Medicine Bow oil fields is transferred to the Utah Oil Refining Co. by the Illinois Pipe Line Co. Crude oil from the La Barge field is received at Granger station during the warmer months of the year. The gravity at 60° F. and the viscosities of the Rock Creek, Leo and La Barge crudes at 40° to 60° F., are shown below:

	Viscosity 40° (S.S.U.)	Viscosity and gravity 60° (S.S.U.)	(A.P.I.)
Rock Creek	300	88	36°
Leo	550	69	43.4°
La Barge	606	100	26.0°

Because of the low viscosity of the composite stream of crude oil being transported, it was not necessary to operate the stations and line from Medfactors, and requirements of the future. After operating for the past 6 months, since the latter part of October 1939, the performance of the line has been satisfactory. It has functioned as well or better than originally expected. From the time the line was put in service, about 6 months ago, no failures in lines or machinery have been experienced. It has been kept in continuous service without the loss of a barrel of oil.

TABLE 1—OIL STREAM AND ATMOSPHERIC TEMPERATURE READINGS

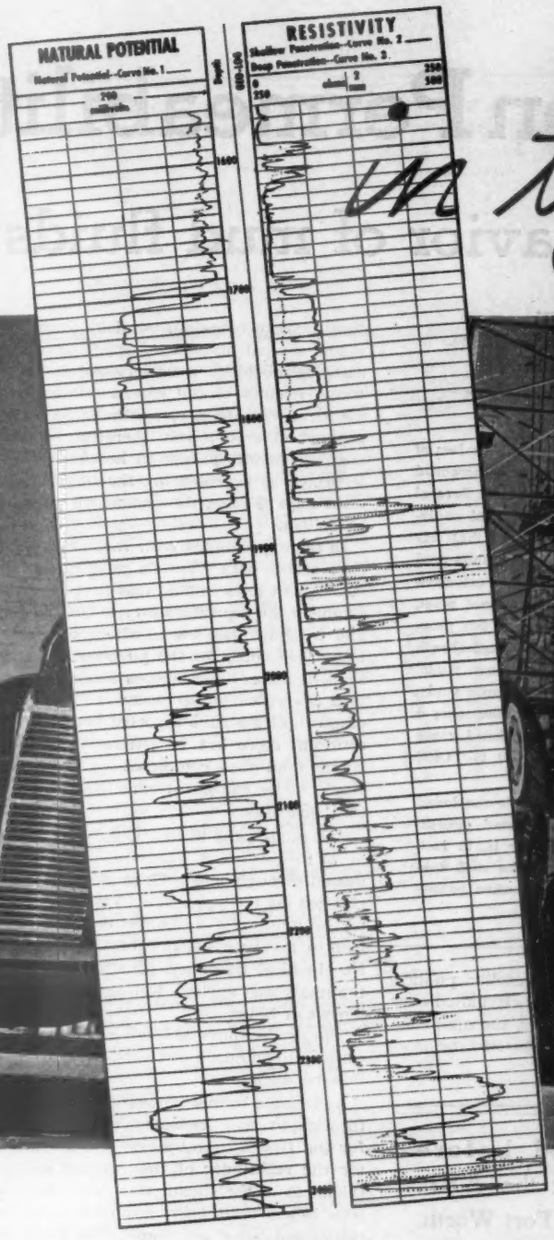
Coldest week on Utah line, January 18 to January 24, 1940

Weekly Averages

	Fort Laramie			Medicine Bow			Granger			Salt Lake City	
	Temp.		Lb.	Temp.		Lb.	Temp.		Lb.	Temp.	
	Atm.	Oil	press.	Atm.	Oil	press.	Atm.	Oil	press.	Atm.	Oil
January 18	—13	38	1,420	—22	30	315	—5	35	610	28	42
January 19	—4	35	1,375	—36	30	395	—35	33	620	8	40
January 20	6	36	1,365	0	32	370	1	34	620	22	41
January 21	6	34	1,400	—14	30	435	4	34	620	24	42
January 22	—4	35	1,440	—34	30	490	—15	30	620	12	42
January 23	10	32	1,445	6	32	530	—6	31	610	22	38
January 24	—4	32	1,425	—12	30	635	6	31	610	22	39
Average for week	—0.4	34.6	1,410	—16.0	30.6	453	—7.1	32.6	616	19.7	40.6
1. Week preceding the coldest week (Jan. 11 to Jan. 17, inc.)	25.4	38.1	1,434	18.6	35.1	379	11.4	35.4	603	24.4	42.7
2. Coldest week (Jan. 18 to Jan. 24, inc.)	—0.4	34.6	1,410	—16.0	30.6	453	—7.1	32.6	616	19.7	40.6
3. Week following coldest week (Jan. 25 to Jan. 31, inc.)	20.4	34.7	1,399	13.4	30.9	584	8.3	31.6	613	30.4	42.6

Oil Drums Drive Cathodic Unit

A windmill built from two oil drums is used to power a cathodic unit, affording a steady drive and absorbing uneven gusts without strain to the structure. A feature of the design is its ability to work under wind from any direction without requiring swivel or deflecting vane. On a cross mounted atop an automobile front wheel and formed from 2 by 4-in. timbers, paired halves of oil drums, cut longitudinally, are set up, with the convex sides of all four parts facing in the same direction. Due to the fact that wind resistance of a semicircular surface is but half that of a flat area of like dimensions, the wind caught behind the cupped sections of drums exerts a powerful and steady driving force, tending to revolve the windmill around the spindle upon which it is mounted. With such a drive, two methods are available for turning the generator; one is by using V-belt drive on the outside of the brake drum of the automobile wheel, letting the belt track along the mud rim of the drum, and be further restrained by the grooved pulley of the generator. This drive, while easy to service, is open to the objection of requiring weatherproofing, while the alternate plan provides its own shelter. The unit pictured has an internal gear ring carried within the brake drum, and engaging a spur gear at the top of the generator shaft—all covered by the flare of the brake drum and consequently shielded from rain and weather. Lubrication of the windmill bearings, consisting of the pair of tapered roller bearings coming as original equipment on the automobile front wheel, is required only at infrequent intervals, the bearings being packed in a good grade of wheel grease, and entirely protected from sun, rain, and wind by the hub cap. Comparison of an oil-drum-powered unit with records from the nearest available U. S. Weather Bureau reports on wind values showed that the unit furnished current for more than 95 per cent of the time under observation, although recorded velocities of winds indicated that output of the desired intensity could have been expected only 70 per cent of the time.



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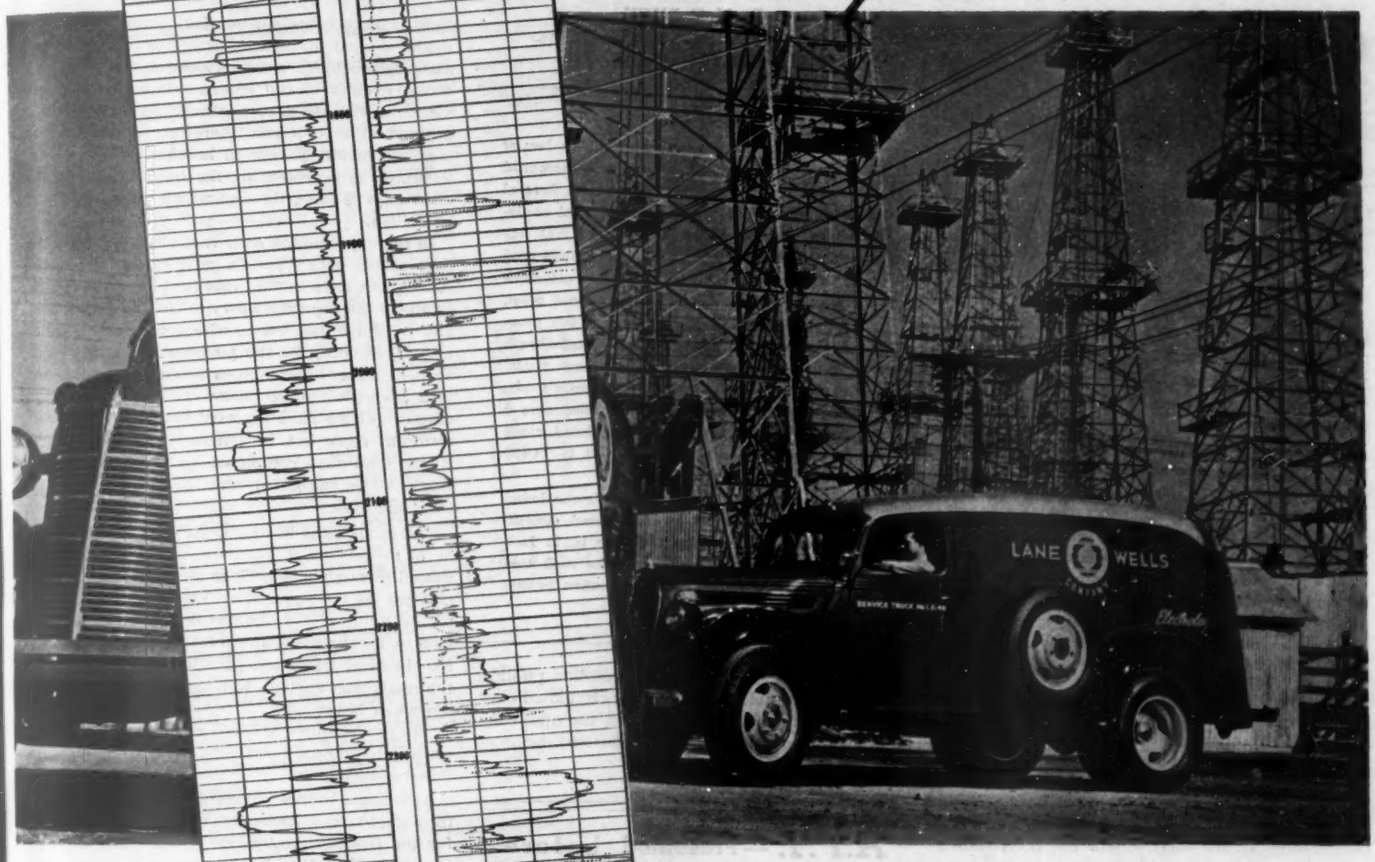

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Effect of Formation Permeability

. . . on the plastering behavior of mud fluids

By H. T. BYCK
Shell Development Co., Emeryville, Calif.

ABSTRACT

It frequently has been assumed that the loss of liquid from drilling mud increases with increased permeability of the formation penetrated. Several recent papers, which present a theoretical analysis of the filtration of muds, point out that this factor should have little or no influence upon mud plastering. The present paper presents extensive experimental data to check this important point.

In order to establish the influence of this property of the formation upon water loss and sheath thickness, plastering experiments were made, with a number of representative California muds, on a high-pressure circulating filter press using a series of real and synthetic consolidated cores whose permeabilities ranged from 10 to 14,600 millidarcys.

As a result of these experiments, it is concluded that, within these limits in unfractured consolidated cores, the plastering behavior is, in fact, dependent only upon properties of the mud fluid and, hence, independent of the formation permeability.

ONE of the factors which is of interest in the analysis of the plastering behavior of rotary-drilling muds and the application of laboratory data to field practice is the effect of the permeability of the formation penetrated during drilling upon liquid loss and sheath thickness.

There is abundant evidence in the literature to show that under normal conditions it is the water of the mud, rather than whole mud, which penetrates the formation. However, there has been a prevalent belief that water loss increases with increased formation permeability, and that lost circulation (loss of whole-mud fluid) takes place when the formation permeability reaches some indefinite high value. Circulation losses have been discussed at some length elsewhere;[1] and this aspect of the problem will not be considered in this paper, which is confined to the region where filtration occurs without mud loss.

It now is conceded generally that the relative plastering behavior of muds in the well is represented adequately by laboratory filtration tests made with filter paper as the filter medium—of course, with due regard to the effect of temperature; and evidence has been presented[2] to show that the plastering behavior of a given mud is very nearly the same when filter paper is used as the filter medium as when sintered alundum filter disks of a permeability of approximately 500 millidarcys are used.

In several recent papers dealing with the plastering properties of muds from a theoretical viewpoint,[3,4,5] it is inferred that the rock permability has little or no effect upon the plastering, but no experimental evidence is presented in this connection. When a single filter medium is used in evaluating the plastering properties of muds, the permeability of the mud sheath has been shown to be the most important factor in controlling the rate of water loss to the formation. The permeability of the sheath (or its reciprocal sheath-resistance coefficient) is a function alone of characteristics of the mud—its colloid content, degree of dispersion or flocculation, solids content, particle size, etc.

In order to establish experimentally the influence of formation permeability upon water loss and sheath thickness, a large number of plastering experiments were made with representative California muds on consolidated cores covering a wide range of permeabilities.

Experimental Work

The experimental data were obtained on a large mudding-off machine patterned after the Jones and Babson[6] circulating filter press, with the modified core holder for full-size cylindrical consolidated cores, described in an earlier publication.[7] The mud under pressure was circulated over the cylindrical surface of the cores, the mud cake building up on this face, while the filtrate penetrated radially through the core.

***A.P.I.*—Presented before midyear meeting of the A.P.I., Production Division, Fort Worth, Tex., May 27-31, 1940.**

Because it was not possible to obtain oil-field cores of sufficiently wide permeability range and suitable mechanical strength for this study, it was decided to use vitreous-bonded aloxite[8] abrasive wheels to represent the formations. These wheels are obtainable in various grits or grain sizes, and the permeabilities of different wheels from the same batch number were found to be closely the same. The nature of the bond precludes any alteration in permeability due to swelling or dissolution during the plastering tests.

In order to establish the identical behavior of these aloxite cores and oil-field cores toward the muds, several oil-field cores of low and intermediate permeability were included in one series of tests. Results of the runs on these cores were identical with those on synthetic cores, within experimental error; and, therefore, it is believed that the results presented hereinafter can be interpreted as representing the behavior of formations such as those through which an oil well may be drilled.

In the experiments with various mud fluids, the first series with Ventura mud differs from the subsequent ones in that this first set was used to establish the reproducibility of the plastering test, and to show that the aloxite cores were similar to oil-field cores for the purpose in hand. In subsequent series aloxite cores alone were used, and in a few cases single runs were made. In several cases duplicate runs reported here were made on different days, but in general the series with a single mud was completed in one day from a single large charge of mud to the reservoir of the apparatus.

The muds used in this work were standardized at 75 lb. per cu. ft. (density = 1,200), and were passed through a 70-mesh screen before they were charged to the apparatus. Viscosity and density of the mud were measured before and after the run to assure constancy of the mud properties. No chemical treatment for viscosity reduction of the muds was applied, well-aged muds made with tap water being used.

The permeability of the cores was measured according to standard methods, using dry air as the flowing medium.

As is usual in this type of experiment, the water throughput was measured at 1-minute intervals for the first 5 minutes and at 5-minute intervals for the remainder of the run—40 minutes. The thickness of the sheath was determined after the core holder had been removed from the apparatus, and after any loosely adhering mud had been washed off with a gentle stream of water.

All experiments were made at a mud pressure of 500 lb. per sq. in.—this representing average well conditions—with circulation of the mud over the core face. Radial flow of the filtrate through the core prevailed.

Inasmuch as the cores were of the same diameter (3 in.), but of different lengths, the measured water throughput in each case was corrected by a factor representing the ratio of the exposed area of the 322-millidary core (taken as standard) to that of the core under consideration. These reduced values are used in analyzing the results.

The exceptionally good agreement between the aloxite and oil-field cores, shown in Table 1, is

TABLE 1.—COMPARISON OF OIL-FIELD AND ALOXITE CORES—VENTURA MUD

Permeability of core, millidarcys	322				450		3,000				6,300		14,600		600		40	10	
Nature of core	Aloxite run No.				Aloxite run No.		Aloxite run No.				Aloxite run No.		Aloxite run No.		Oil-field core run No.		Oil field core run No.	Oil-field core run No.	
	1	2	3	4	1	2	1	2	3	4	1	2	1	2	1	2	1	1	2
Filtrate volume, ml. in 40 min.	50.5	46.0	46.0	47.5	45.0	46.0	43.5	45.0	45.0	45.0	45.0	48.0	46.5	48.5	224	225	98.0	125.5	122
Area of core, cc.		32.7			31.0			30.9			29.3		31.6		152		65.5	76.13	
Throughput corrected to area of 322-md. core, ml.	50.5	46.0	46.0	47.5	47.5	48.5	46.0	47.6	47.6	47.6	50.3	53.6	49.7	50.2	48.2	48.3	49.0	53.6	52.4
Average of corrected values, ml.		47.5			48.0			47.2			51.9		49.9		48.3		49.0	53.0	
Sheath thickness, millimeters	3.8	4.0	4.0	4.1	4.0	4.0	3.8	3.8	4.0	4.0	4.0	4.1	4.3	4.2	3.8	4.0	3.8	4.0	4.0

Mud weight = 75.0 lb. per cu. ft. Circulation at 500 lb. per sq. in., room temperature.

TABLE 2—SUMMARY DATA OF VARIOUS MUDS ON SERIES OF CORES

Permeability and nature of core—	Average water throughput at end of 40 min. (milliliters) Mojave	Ventura	Coalinga	Palos Verdes	Lebec
322-md. aloxite	69.0	47.5	23.0	22.0	15.2
450-md. aloxite	75.4	48.0	25.3	23.2	13.8
3,000-md. aloxite	69.4	47.2	22.0	23.3	13.2
6,300-md. aloxite	77.4	51.9	25.7	22.1	13.9
14,600-md. aloxite	74.5	49.9	25.5	23.3	17.3
600-md. oil field	...	48.3	...	...	...
40-md. oil field	...	49.0	...	...	...
10-md. oil field	...	53.0	...	...	...
Average of runs on all cores	73.5	49.0	24.3	22.6	14.6
Average sheath thickness, millimeters	5.28	3.99	2.85	2.83	2.01
Permeability of sheath, darcys	7.42 (10^{-4})	3.43 (10^{-4})	1.28 (10^{-4})	1.05 (10^{-4})	0.46 (10^{-4})

considered sufficient evidence of the similarity in behavior of these two types of core material toward mud fluids. This agreement between the filtrate values for different cores reduced to a common area is more striking in view of the fact that the actual throughputs using oil-field cores are from two to almost five times the actual throughput with the 322-millidarcy aloxite core.

The permeability of the mud sheath was calculated in every case from data obtained during the run, as follows: The area (A) of the sheath was taken as the exposed area of the core; the thickness of the sheath (X) was measured at the end of the run, as mentioned previously. The pressure drop across the sheath was taken as the applied mud pressure, and it was assumed that pure water was the flowing medium, with viscosity taken as 0.88 centipoise (25.5° C.). The rate of flow of water was taken as the rate during the last 5 minutes of the plastering test. Because the total throughput in this interval was small, it was assumed that the sheath thickness did not increase appreciably; and, hence, the thickness at the end of the run is believed to be as suitable a value as can be obtained.

Linear flow through the sheath was assumed, as the thickness of the sheath is small compared to its radius of curvature; it is, in effect, a flat plate.

Substitution of the above data in the familiar expression of Darcy's law permits the calculation of the sheath permeability, as, for example, the following calculation for one run with Ventura mud:

Area (A) = 32.7 sq. cm.
Thickness (X) = 0.399 cm.
Rate of flow through the sheath, $\frac{dQ}{dt}$
= 3.18 ml. per 5 min. = 0.0106 ml. per sec.
Pressure difference ΔP = 500 lb. per sq. in.
= 34 atmospheres

$$k = \frac{\mu \cdot \frac{dQ}{dt} \cdot X}{A \Delta P} = \frac{(0.88)\ (0.0106)\ (0.399)}{(32.7)\ (34)}$$

= 0.00000343 = 3.43 (10^{-6}) darcys.

Discussion of Experimental Results

The theoretical considerations earlier referred to in this paper, which lead to the conclusions that formation permeability is without appreciable effect upon the plastering properties of muds, have been confirmed experimentally.

Representative muds without chemical or other treatment are found to give the same water loss and mud-sheath thickness on cores of widely different permeabilities.

The sheath permeability calculated for each experiment (see Table 2) was found to be independent of, and several orders of 10 smaller than, the core permeability. Inasmuch as, in the theoretical expressions for plastering, the rock permeability enters this one term as the ratio of filter cake to core permeability, it is seen than this term becomes vanishingly small for the conditions of the present set of experiments.

The range of formation permeabilities over which normal mud plastering, rather than lost circulation, takes place has been extended to cover most of the formations penetrated during drilling. Numerous experiments with unconsolidated sands, reported elsewhere[9] and confirmed in these laboratories, indicate that with these media cement slurries cannot be forced into the pores for any appreciable distance.

Such results cast grave doubt upon the ability to force either cement slurries or whole mud into homogeneous formations; and it appears necessary to conclude that the appearance of mud or cement in wells adjacent to the one under consideration can take place only through crevices, channels, fractures, or caverns, or through formations of extraordinarily high permeability—in fact, only through formations in which the pore sizes are so large as to cause the concept of permeability to lose its generally accepted meaning.

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SAFETY - Modern Board Aids In Tubing Job

DUE to paraffin and sand troubles rods and tubing in many wells must be pulled quite frequently and in many fields there are a large number of units and crews which devote their entire time to this work. In some cases only the rods will have to be pulled in order to replace the pump valves or to scrape the tubing. In other cases, repairs to the tubing or repair or replacement of the working barrel require that the tubing be pulled also.

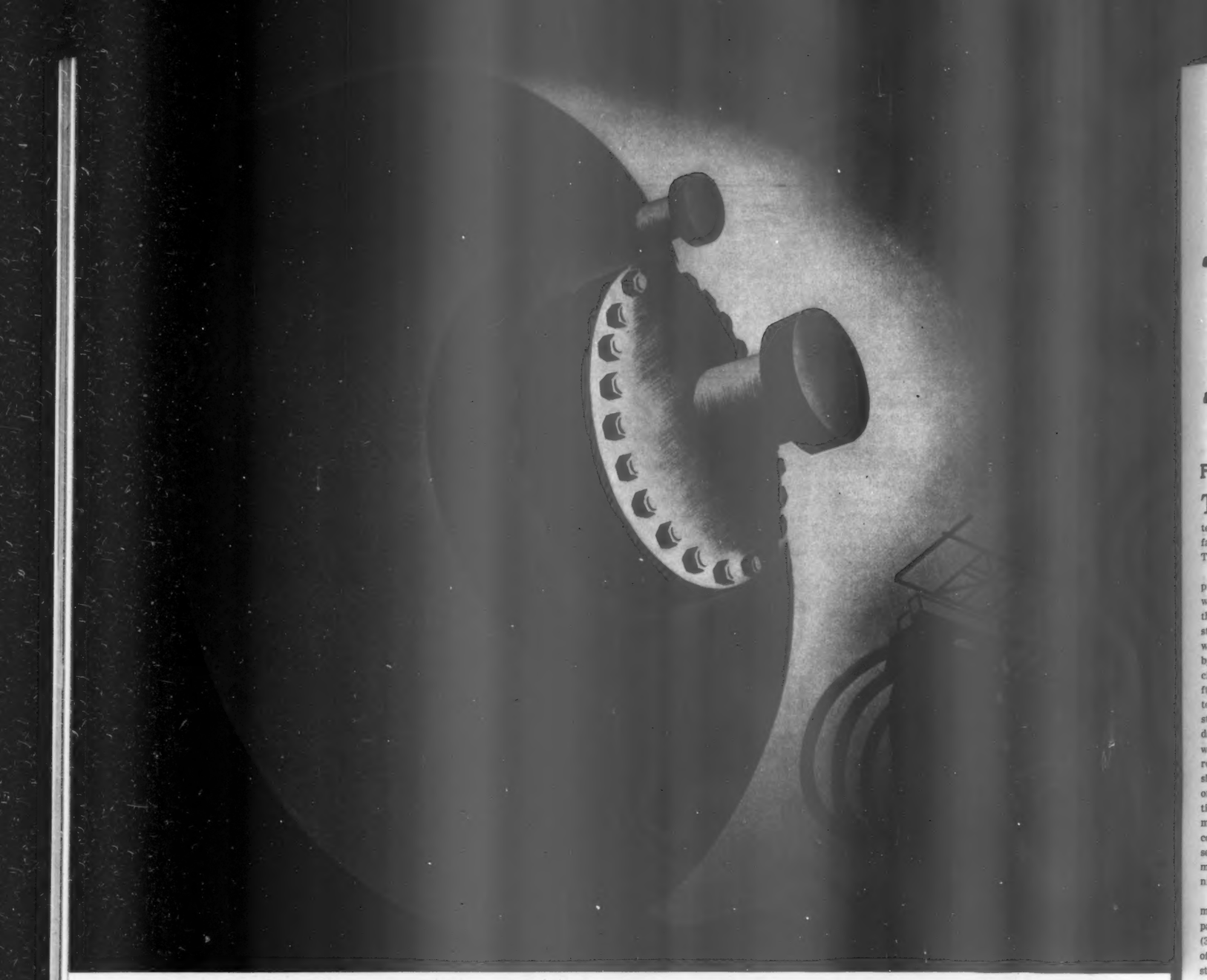
In most fields the tubing board is left in the derrick although some crews prefer to use their own equipment when working over a well. This is a holdover from the days when the tubing boards were made from lumber and became quite rotten due to weathering over a period of time. The boards would often get into a condition where they would not safely support the weight of a man, not to mention the strain placed on them by the equipment.

Modern practice on deeper wells where tubing jobs occur frequently is to install a good tubing board, either wooden or steel, and leave it in the derrick. This eliminates the necessity of installing the board for each separate job. The newer wooden boards and the steel boards are designed so they fold back against the side of the derrick, thus leaving a minimum surface exposed to the elements which will cause rust or decay.

The steel boards are preferred by most crews because they provide a better and a safer working surface for the derrick man. With a wooden board, only the hands and head of the derrick man are visible to the operator and the other members of the crew on the floor. The ground crew is likewise out of view of the derrick man unless he leans over the board. There is also the danger of slipping on the wooden board, particularly in wet weather. Where large strings of tubing are being handled, difficulty is often encountered in getting the tubing to lay in the rack.

The steel board, being made from angle irons and covered with heavy screen wire, presents a safe working surface even during wet weather. In addition it has a small angle iron at the front which prevents the derrick man's feet from slipping over the edge of the board. The derrick man is visible to the men on the floor and they can easily tell if he is in any difficulty. He can likewise check up on them without leaning over the board. Through the use of a notch in the board at the derrick man's left, a satisfactory resting place is provided for the tubing; "swarming" of the tubing is very dangerous as it requires the derrick man to remove his safety belt while he climbs around the outside to untangle the tubing and get it back in place.

Through the use of paint, the steel board can be protected from the weather. While more expensive originally than the wooden boards, the increased life of the board and the safety it provides makes it a good investment.



HOLDING WHERE IT'S HOT

What with temperatures ranging up to 1000° F. and high stresses, the bolts used in much oil refinery equipment have no sinecure — and the failure of a single bolt may cause plenty of trouble.

That is why Chromium-Molybdenum (SAE 4140) steel is being more and more widely used for high temperature bolting on reaction chambers, pumps, etc.

This steel meets ASTM Specifications A 193-37 T. At the elevated temperatures encountered it has all the requisite physical properties, including good creep strength.

Chrome-Moly (SAE 4140) and other Molybdenum steels are meeting many of the special problems of refinery service with dependability and economy. These steels and their applications are described in our technical book, "Molybdenum in Steel". A copy will be sent free on request to interested production executive or engineer.

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MOLY

Progress in METALS

By W. L. NELSON

Fishing Tools

THE extreme and unforeseen conditions under which fishing tools must operate require that the best materials that are known must be employed in their manufacture. The following is quoted from Nickel Steel Topics, page 3, August 1939:

"An outstanding example of the satisfactory service provided by the nickel-chromium-steel fishing tools was furnished recently at a cable-tool drilling rig in the Pennsylvania field. The cable broke on a drilling string at 6,200-ft. depth in an 8-in. hole. The string which had a 5½-in. by 35-ft. stem on it was held fast by cavings. A second string having an 8-in. Spang full-circle slip socket on it and employing a 4¼-in. by 47-ft. stem was let down into the well. When the socket took hold of the lost string, jarring was started with a stroke of 58-in. and was kept up 24 hours a day for 11 days before the lower string was loosened. So great was the impact and wear due to the jarring that the rope socket of the lower string was frozen into the slip socket and had to be burned loose. The drilling bit on the lower string had unscrewed, due to the continual impact. However, in spite of the terrific punishment encountered, the socket was in almost perfect condition and after minor redressing was returned to service on another job, constituting a striking testimonial to the impact and fatigue resistance of the nickel-alloy steel from which it was fabricated."

The slip socket referred to in this quotation was manufactured by Spang & Co., of Butler, Pa. This company utilizes oil-quenched and tempered S.A.E. 3425 (3 per cent nickel, 0.75 per cent chromium) for many of its tools, a nickel-chromium-molybdenum die-type steel if greater hardness is required, and S.A.E. 3140 (1.25 per cent nickel, 0.6 per cent chromium) for drive-clamp bolts.

●

Flame Hardening of Oil-Field Equipment

Abstract: Flame Hardening in the Manufacturing of Drilling Equipment, a paper by Michael O'Hara, presented before the International Acetylene Association in its meeting in March 1939.

MODERN water-cooled tips and torches have made it possible to apply flame hardening to jobs that heretofore had not been hardened or had been hardened by more expensive methods.

Sprockets were first hardened in the Beaumont plant of the International Derrick & Equipment Co. in 1936. "Cut-tooth hardened alloy-steel sprockets, together with proper lubrication, have effected savings for the machine users as yet undetermined, since no replacements have been made in 2½ years of continuous service—a truly remarkable record as compared with the best performance in the past." The sprocket teeth are hard to 500-550 Brinell.

Last year flame hardening was applied in the Columbus plant to various items of shafting used in oil-well pumping equipment. Case depths of ⅛ to ¼ in. and having a hardness of 560-580 Brinell are being produced on a wide range of shaft diameters and at various positions along the shafts. The steels giving best results were S.A.E. 1045 and 4140. The chromium molybdenum steel is more dependable and works more easily but the difference in material costs precludes its use for many items.

Considerable detailed information is given as to the exact methods found necessary in each step of the flame-hardening operations. The author concludes that all details must be carefully controlled—even to such a degree that each item of finished equipment is tested by a Rockwell machine.

"The process as applied to our oil-field equipment is successful, fast and helps our costs over previous methods. We have not applied it in many places and do not feel that it should be applied to more items before a thorough study has been made of the (new) application."

The article appears to be a highly practical one for equipment manufacturers.

●

Increase in Welding

THE production of steel welding wire (rod) in 1938 was 117,395,000 lb., according to data furnished to the American Iron and Steel Institute. This represents an increase of 486 per cent, or nearly five times over the amount manufactured in 1932. Over this same period the increase in the production of steel ingots was only 210 per cent. Yearly productions were as follows:

	Welding wire (lb.)	Per cent of 1932 production: Welding wire	Per cent of 1932 production: Steel ingots	Ratio of increase in welding wire to increase in steel-ingot production
1932	24,150,000	100	100	1.00
1933	49,450,000	205	170	1.21
1934	72,100,000	299	193	1.55
1935	97,750,000	405	252	1.61
1936	140,300,000	581	353	1.65
1937	155,310,000	643	374	1.75
1938	117,395,000	486	210	2.32

The last column indicates a continual increase in the use of welding. Whereas in 1932 there was one job of welding for each unit of steel produced, by 1938 it appears that more than two jobs (2.32) of welding were done for the same unit of steel production.

●

Avoiding Mushroomed Ends Of Drills and Chisels

A BRONZE welded band gives added safety and efficiency to hammer-driven hand tools. Aside from considerations of safety and lengthened chisel life, the safe-ended chisels can be struck more soundly and surely, because of the larger striking area.

The March 1940 issue of Oxyacetylene Tips, Page 60, points out the above factors and outlines a simple and rapid procedure for preparing the tools. "Briefly, the entire procedure consists simply of cutting the striking end of the tool down to sound metal, where this is necessary, and grinding a small shoulder all the way around the cut end. A reinforced band of bronze is then deposited on this shoulder by means of the oxyacetylene blowpipe, and the striking end of the tool is ground square, completing the safe-ending application." Finished chisels are shown in Fig. 1. The 4¾-in. chisels were safe-ended in 25 minutes. About 24 in. of bronze rod, a little flux, 3 cu. ft. of oxygen, and 1 cu. ft. of acetylene were used in preparing the four chisels.

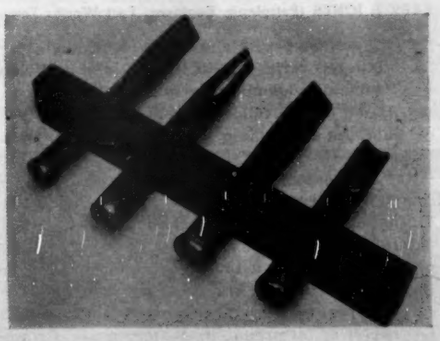

Fig. 1—After the chisels have been cleaned, the striking ends are dressed square by additional grinding. In service, these safe-ended chisels will outlast three ordinary chisels without cracking or spalling

●

Mechanism of Corrosion Fatigue

DETAILS of how the phenomenon of corrosion fatigue takes place are being studied by A. J. Goulds and U. R. Evans of Cambridge University. Figures and greater detail may be found in Special Report No. 24 of the Alloy Steels Research Committee of the Iron and Steel Institute, London, 1939.

These authors studied the effect of potassium-chloride solutions on the fatigue limit of mild carbon steel wire and the effect of the inhibitor, potassium chromate, on the action of the salt solution upon wire under conditions of fatigue.

At stresses above the fatigue limit in air, the presence of the corrosive solution did not have any effect. This would indicate that fatigue failure under these conditions is essentially a physical phenomenon.

At stresses below the fatigue limit in air, the fatigue stress was definitely lowered by increases in the strength of the salt solution. Even the chromate failed to produce the passivity that is normally produced.

The authors studied the condition of the rust or oxide film during the fatigue testing by means of potential measurements. The instant at which the film was broken could thus be determined.

●

Brake Bands for Draw Works

NICKEL Steel Topics for October 1939 recommends wrought nickel molybdenum steel for brake bands. This recommendation is noteworthy because heretofore cast steel (and even alloy cast iron) has been the rule rather than wrought steel. The following quotation is taken directly from the Questions and Answers section of the above publication.

Q. We would appreciate your recommendations for a steel suitable for the brake bands on a draw works used in the rotary system of oil-well drilling.

At present these bands are of mild carbon steel, ¼ in. thick and 9 in. wide, with drilled or punched holes for bolts or rivets. They have to stand up under considerable tension and bending stresses, and heat up frequently to such a degree that a blue-temper color appears. When hot, the men often douse cold water on them. Also, they have to operate at times in the winter, in subzero outdoor temperatures. This steel does not have sufficient strength and toughness to perform satisfactorily, in view of these varied and arduous conditions of service.

A. A wrought nickel-molybdenum steel of about 0.60/0.70 per cent carbon content has been used successfully in this service. This steel is employed in thinner-gage strip than your present bands (3/32 in.), and and after cold rolling is heat-treated to provide the following properties:

Brinell hardness	380/420
Ultimate tensile strength	180/200,000 lb. per sq. in.
Yield point	150/170,000 lb. per sq. in.

However, in view of the abuse to which the bands you describe are subjected, particularly as regards pouring cold water on them when hot, we would suggest a steel of somewhat lower carbon content in this case. S.A.E. 4045 nickel-molybdenum steel is obtainable in the form of strip, and should serve your purposes satisfactorily. It can be treated to almost any hardness, but probably the best service for this application, all things considered, would result if you oil-quench and draw to a Brinell hardness of around 250/275.

A. P. I. ABSTRACTS

Papers presented before mid-year meeting at Fort Worth, Tex., May 27-31, 1940.

Performance Testing of Motor Fuels; Development of Conversion Formulas for Values by Various Methods

HERSCHEL G. SMITH (Gulf Oil Corp.).

A PROGRESS report is made on the results of the third year of operation with the A.I.L.* laboratory method for indicating road performance of motor fuels. An improved design of duplex unit employing two engines, with combination of single flywheel and water brake, is described. Conclusions are noted from preliminary studies of effect of antifreeze solutions on the performance characteristics of motor fuels. A table is offered giving summary of the comparative dimensions and physical conditions involved for the different types of motor-fuel testing units and methods. A description is given of a simplified procedure for recording observations by the "ear," or sound, method of determining the knocking performance characteristics of a motor fuel during acceleration loading by the A.I.L. test unit, which method greatly simplifies the amount of records and calculations involved with this type of testing.

A number of formulas that have been developed for the calculation of the approximate octane performance values by the A.I.L. method are disclosed as an indication of probable average road performance; also for conversion from one standard method to another, merely with the use of factors involving the usual inspection data and the octane-number value by any one method. These conversion formulas usually yield values that are within the limit of error of the respective determinations as carried out by different laboratories. Although perhaps not quite so accurate in all cases as the actual determinations of the results by any one laboratory, the derived values appear to be sufficiently accurate for most operating or design purposes; so that considerable saving appears possible in laboratory work in the way of simplification of motor-testing activities of all kinds.

*Acceleration-inertia-load test.

●

Results of Corrosion Tests In Oil Refineries

N. W. MITCHELL (Chase Brass & Copper Co., Inc.).

CORROSION testing in the oil refinery has been conducted for several years with the use of tensile-test specimens. Evaluation of corrosion has been by loss of original tensile strength plus visual examination.

A large number of cases are listed, showing results obtained from groups of test specimens located in various refineries under many different operating conditions. The results are discussed with the aim of indicating the most satisfactory alloy for actual service.

●

The Economic Significance of Safety

R. B. ROAPER (Humble Oil & Refining Co.).

THE central theme of this paper is that safety is good business. Profitable operations naturally depend on efficiency of equipment and personnel. An effective accident-prevention program concentrates its attention not only on the maintenance of equipment and safe working conditions, but also on the training of employes in the efficient performance of work—realizing that the prevention of accidents and the building of morale follow as natural byproducts. Several examples given by the author indicate how money savings can be effected and increased returns on investments realized, particularly through securing individual company credits on the base rates for compensation insurance as a result of improvements in accident experience.

●

Corrosion of Copper and Copper-Base Tubing in Oil-Refinery Heat-Transfer Equipment

R. A. WILKINS, E. S. BUNN, and W. LYNES (Revere Copper & Brass, Inc.).

CORROSION of copper and copper-base heat-transfer tubing in the oil refinery has been considered briefly in relation to: (1) Sources and types of corrosion; (2) general bases for selection of tube alloys; and (3) application of chemical and mechanical methods of corrosion control.

Relevant published and unpublished information has been studied, abstracted, and correlated; and experience utilized from contacts with the refining industry and from examination of numerous failed tubes.

A bibliography of 104 references has been appended.

●

Optimum Spacing of Dolomite Acreage in the Texas Panhandle

PARK J. JONES (Petroleum Engineer, Fort Worth, Tex.).

THE author presents data showing that ultimate recoveries within 10 to 20-acre limits on the Panhandle dolomite are independent of spacing. Based on the following representative physical data: An allowable of 20 bbl. per day per well, irrespective of spacing; 365 operating days per year; an economic limit of 3 bbl. per day; an investment of $22,500 per well; an operating cost of $1,800 per well per year, including taxes; a one-eighth royalty; and interest at 6 per cent, it appears that, on the average, optimum spacing of the dolomite acreage in the Texas Panhandle is 18 acres per well at the present income of $0.98 per barrel of oil produced. A more general statement reads thus: The optimum spacing on the dolomite acreage is one well per 136,000 bbl. of recoverable oil. The conclusion does not hold if the allowable is not on a per-well basis.

Testing of Nonferrous Alloys for Condenser-Tube Service Under Conditions Simulating Actual Industrial Service

R. W. MOORE and S. KLEINHEKSEL (Socony-Vacuum Oil Co., Inc.).

DUE to the varied conditions encountered in service, it is extremely difficult to devise laboratory experiments which will evaluate adequately the corrosion resistance of nonferrous alloys for refinery condensers. By placing tensile-test specimens in the lines, in conjunction with small experimental condensers in parallel with the large condensers, it is believed that results indicative of those that may be expected in the larger units may be had. The method of mounting and placing the tensile specimens, and a description of the experimental condensers, are given. Data are shown in chart form; these data were obtained from tensile specimens placed in the lines. In order to be of value, these data must be obtained upon specimens placed in both the inlet and outlet of the condenser—inasmuch as it has been found that corrosive conditions are quite different at the two points, and both conditions must be taken into consideration in the evaluation of the alloys. Very little data have been obtained as yet upon the experimental condensers.

Some remarks are devoted to the study of conditions which affect condenser-tube life. Admiralty tubing, it has been found, is used in most nonferrous condenser installations; and even under severe corrosive conditions it is quite satisfactory. It is pointed out, therefore, that attention to the study of conditions causing corrosion and means of remedying them would be of value.

●

Testing of Brass Alloys for Dezincification Resistance

F. M. BARRY (Scoville Manufacturing Co.)

A DESCRIPTION of a testing procedure for studying the dezincification of copper-zinc alloys is given. For this purpose, a total immersion of suitable specimens in a 1 per cent cupric-chloride solution at a definite temperature has been found to be satisfactory. Dezincification is determined by loss in tensile strength and elongation of the test specimens after definite periods of immersion. Results of tests are reported for copper and several copper alloys, including admiralty metal and modified admiralty-metal alloys, containing small percentages of antimony, arsenic, and phosphorus, respectively. A peculiar type of intercrystalline corrosion of arsenical admiralty metal is described and illustrated by micrographs.

●

Some Variables in Filter Clays

L. M. HENDERSON, C. M. RIDGWAY, and W. B. ROSS (Pure Oil Co.).

THE influence of water, carbon, and porosity on the filter efficiencies of Florida clays used on Pennsylvania cylinder stocks and bright stocks was investigated. In addition, a limited number of tests was made on bauxite clays.

It has been observed that the water is present in the clay in two states of affinity. Part of the water may be held loosely and removed readily at temperatures of about 450° F., whereas another part of the water is held more tenaciously, and is removed completely only on heating to almost 1,800° F. The former type of water has been

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termed "adsorbed" water; the latter, "bound" water. The filter efficiency of a Florida clay decreases appreciably if the bound-water content is less than 2 per cent. The adsorbed moisture affects appreciably the efficiency of the Florida clay. Inasmuch as freshly roasted Florida earth picks up moisture from the air rapidly at atmospheric temperatures, it is shown that the handling and storage of the clays, subsequent to their burning and prior to filtration, is an important factor in maintaining the filter efficiency of the clay.

The presence of carbon affects adversely the yield and cast of Pennsylvania cylinder stocks of 8 N.P.A. color. The influence of carbon on a 5 N.P.A. bright stock is not as great. The filter efficiency of Florida earth increases with porosity, inasmuch as the total surface area per gram of clay is a function of the porosity of the clay.

●

Significance of the Doctor Test for Gasoline

JOHN HAPPEL and S. P. CAULEY (Socony-Vacuum Oil Co., Inc.).

A CRITICAL review is presented covering the significance, to both consumer and manufacturer, of the doctor test as a gasoline specification. From the viewpoint of the former, the question of odor frequently is associated with this test. Data presented indicate that the test does not give a true indication of acceptable gasoline odor; and that the practical limit of mercaptan concentration in a gasoline, without causing objectionable odor, is usually much greater than that demanded by the sensitivity of the test.

It is concluded that, for the best interests of all concerned, the mercaptan concentration in a finished gasoline should be a matter of economics, and should not be fixed by an arbitrary test giving no real indication of gasoline quality. Its limited general use by agencies other than the refiners themselves, together with its lack of significance, should aid in the elimination of the doctor test as a gasoline specification.

●

Knocking Octanes

C. H. VAN HARTESVELDT and H. W. FIELDS (Atlantic Refining Co.).

OCTANE numbers of gasolines have received much attention in recent years in the public press, with the result that "high test" and "high octane" have become synonymous expressions; and the role of high-octane gasoline as a "cure all" for the ills of motor-car performance has been accepted more widely than the facts warrant.

In this paper a comparison is presented of the value of improved automobile performance as observed by the "average driver," with the incremental costs of producing gasolines of successively higher octane numbers.

The automobile-performance observations have been made in car models now being operated by the public, rather than in engines specifically designed for extremely high-octane gasolines.

Further, it is notable, in view of many recent controversies, that "road octanes" are used throughout the discussion, even though it is admitted that the road-octane method leaves something to be desired in the way of reproducibility from car to car.

The improvement in the performance of present-day motor cars, as a result of wide-range increases in gasoline octane numbers, is shown to be minor relative to the increase in refinery cost of effecting these octane increases as reflected in potential reduction of the profit returns on investments in the petroleum industry.

A note of caution is struck, lest the refiners let competitive enthusiasm undermine the financial stability of the industry instead of proceeding on a sane and logical course of developments for the future.

●

Copper Alloys and Their Application In Petroleum Refining

JAMES T. KEMP (American Brass Co.).

THE copper alloys in common use fall into five groups that have many similar metallurgical and mechanical properties. Their metallurgy is outlined briefly, and their mechanical properties appended in some detail.

Oil refineries use relatively few of the numerous copper alloys. Most of these alloys are employed in heat-exchanger and other apparatus in which their corrosion-resisting properties are of advantage. In this connection condenser tubes are the most important, and are discussed at length along the lines of their current American usage.

●

Practical Removal of Sulfuric-Acid Fog by Bubble-Phase Absorption

D. W. BRANSKY and F. F. DIWOKY (Standard Oil Co. [Indiana]).

VARIOUS methods of the removal of H_2SO_4 droplets from the stack gases of sulfuric-acid manufacturing and concentrating plants have been evaluated. The various known methods have been divided into two categories, viz., effective and ineffective, according to the practicability of the method from both the viewpoint of sulfuric-acid removal and the economic picture. Effective methods such as: (1) The filtration of the stack gases through various wetted media; (2) the decomposition of acid mist by heating to 1,000° F. or above under controlled conditions of combustion; (3) the use of Cottrell precipitators; (4) the use of steam ejectors with subsequent condensation of the steam; and (5) the use of turbo-mixers were discarded because of high investment or high operating costs. A new method, in which the gas is bubbled through an aqueous solution of a foam-producing substance, has been found to be extremely effective in removing H_2SO_4 droplets, and has a very low investment cost.

The most effective foam-forming agent found consists of the sulfonic acids obtained from the hydrolysis product of the acid sludge derived from the treatment of petroleum. These acids are readily soluble in water, form a relatively stable bubble phase in a dilute aqueous or sulfuric-acid solution, and are soluble in aqueous solutions of H_2SO_4 containing up to 10 per cent acidity. A laboratory investigation, subsequently followed by a pilot plant investigation, indicated that the method was effective in removing approximately 90 to 98 per cent of the H_2SO_4 in the incoming gas, and that the efficiency of the H_2SO_4 removal was practically independent of the concentration of the H_2SO_4 in the gas and the temperature of the solution over ranges of 80° to 186° F. It was found also that the efficiency of removal was affected greatly by the contact time. The pilot-plant experiments demonstrated that, with a contact time of 10 to 11 seconds, approximately 93 to 95 per cent of the total H_2SO_4 may be removed in continuous equipment having a pressure drop of approximately 2 in. of water. Economic calculations have indicated installation, operating, and repair cost to be approximately 50 per cent that of equivalent electrical precipitation equipment.

Practical Utilization of Rate-of-Penetration Drilling Data

C. A. YEATMAN (Shell Oil Co.).

THE importance of "rate of penetration" achieved during drilling as a clue to a classification of the type of formation being penetrated has been recognized for some time. The reduction of this factor from a casual observation to a strict measurement definitely has increased its value not only as an indicator of the type of formation being penetrated by the drill, but also as an aid in the development of more economical drilling technique.

The use of recording instruments in conjunction with the analysis of drilling penetration speeds as yet has not been sufficiently extensive to develop a complete estimate of its usefulness. However, it definitely has evidenced the following points of value:

1. Its correlation with the results obtained from electrical logging is desirable, as it develops information while, rather than after, drilling operations are in progress; and, moreover, it aids in eliminating doubtful interpretations of formation changes.

2. It promotes "formation consciousness" with the drillers, and thereby encourages closer observations of formation changes.

3. It provides an accurate means of analyzing the economy of established drilling-bit-renewal practices.

4. It aids in determining coring intervals in wildcat wells. Furthermore, when ditch samples are collected, it has been of considerable value in the attendant correlation and classification of such samples.

●

Prevention and Removal of Paraffin Accumulations

W. Y. BROWN (Carter Oil Co.)

WAYS and means now popularly employed in the oil-producing areas of the United States for both preventing and removing paraffin accumulations are discussed, with particular reference to new and improved techniques which have appeared during the past decade. The problem is considered only from the producer's standpoint, which includes both prevention and removal of the waxy deposits laid down by most crude oils in their movement from an underground reservoir to lease storage tanks. The study is founded on the opinions and facts furnished by individuals and companies in reply to a questionnaire which recently was circulated to producers throughout the industry under the sponsorship of the Institute's eastern district topical committee on production practice.

Mindful that the crude oils produced from a greater portion of the fields in this country contain waxy or paraffinic components which will precipitate and accumulate under the proper conditions, and that the severity of the paraffin problem in producing fields is governed both by the characteristics of the oil and the conditions under which it is removed from the reservoir, the following conclusions are drawn from the eastern district production practice committee's recent paraffin survey:

1. The problem today is about equal in severity to that experienced by operators 10 years ago. Although the conservation policies by which producers in most states now abide have tended toward the alleviation of the problem, the production-rate limitations governed by proration laws, in an approximate measure equally have aggravated paraffin deposition. This is particu-

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larly true in young fields where production is obtained by natural flow.

2. Other than a widespread adoption of those principles promoting gas conservation and increased ultimate recovery, nothing of note has been applied successfully during the past decade for preventing paraffin accumulations.

3. Some progress has been made, however, in the direction of removing the accumulation after it has occurred. This progress includes the development of automatic scrapers for the tubing of flowing wells, marked improvement in wire-line scraping equipment, and betterment of commercial chemicals and the techniques for applying them.

4. Although the primary factor influencing the preference of any paraffin-removal method is cost, no single technique for handling a given type of deposition can be recommended universally. This is due to those inherent variables affecting the operating policies and earnings of the many companies producing oil from the pools of this country.

5. A general decline, and in the newer fields complete disappearance, of the use of steam as a paraffin-removal technique is observed. This decline is a result of the replacement of steam by other means as pumping power, and of the expense involved in fitting properties with lease boilers and steam lines for the sole purpose of paraffin removal.

6. Although paraffin problems exist in varying degrees throughout the producing industry, those fields lying in the northern climates tend to suffer more from the expense and inconvenience brought about by the accumulation. This is explainable by the direct effect of atmospheric temperature on severity of flow-line and stock-tank deposition.

7. Those methods now preferred by oil producers for removing paraffin accumulations as indicated by the Institute's questionnaire are listed in the order of their popularity. Such methods as pertain only to strongly specialized equipment are not included.

●

Laboratory and Field Endurance Values of Sucker-Rod Materials

D. R. DALE and D. O. JOHNSON (S. M. Jones Co.).

A DESCRIPTION of fatigue testing used in the determination of endurance values for sucker-rod steels is presented. The authors then proceed to show how endurance values are affected by speed of testing and by various brine analyses. A correlation is given between actual sucker-rod field performance and laboratory endurance values made with brines from the same fields.

Through this procedure it is hoped to point out the need for standardization on endurance-value tests in comparing sucker-rod materials, and also the need for modification of the tests to simulate more closely actual field conditions.

Attention is given to progress and possibilities in adapting endurance-test data as a yardstick for sucker-rod materials. Starting with air-endurance tests, a place has been reached where, on a few steels, it is possible to correlate field and laboratory results. On many steels the actual oil-field-brine data have been used, and these soon will be correlated with field results.

Until all endurance-value data have been established on a standard basis, endurance values of two steels, for instance, should be compared only when run with identical brines and speeds under properly standardized laboratory conditions. Unless this precaution is taken, false—and even dangerous—conclusions may be obtained which could easily result in costly material misapplications. As the large amount of published data at this time is based on 1,750 r.p.m. with established synthetic brine, this procedure offers the largest field for safe material comparisons—until other data, at standard slower speeds and with actual field brines, are available on a sufficient scale.

●

Selection of the Most Economical Pipe and Valve Size and Rate of Flow in Piping Systems

S. P. JOHNSON and F. L. MAKER (Standard Oil Co. of California).

THE size of long pipe lines usually is determined by balancing pipe cost against pumping cost. As a formal economic study for each element of a plant piping system would be out of the question, various shortcut methods commonly are employed, the most usual being to assume a reasonable velocity or a reasonable pressure drop on the basis of experience or common sense. This paper examines these methods, and shows that they are apt to err when the density or viscosity of the fluid is unusual or when special materials are required. A rational method of selecting pipe size for any fluid is worked out, and charts are included which permit the economic selection of size to be made with a minimum of calculation.

It is shown that valves, and sometimes other appurtances, are not necessarily best made the same size as the line. The economy of small-size valves has been worked out, and suggestions are made for installation.

The flow rate in a piping system usually is dictated by process requirements or basic assumptions. There are, however, interesting exceptions when the designer of the piping must choose the flow rate as well as the pipe size to secure the lowest overall cost. One of the most important problems of this class arises in designing a loading system for tank ships, tank cars, or trucks when a three-way balance should be struck between pipe cost, pumping cost, and cost of delay. This problem is simplified by the development of a chart showing the most economical flow rate for any given or assumed loading system.

●

A Review of the Principles of Oil-Reservoir Performance

T. V. MOORE (Humble Oil & Refining Co.).

PRODUCTION of oil is accomplished by displacing the oil from the pores of the sand with either gas or water. In any case, some oil is left in the sand, because sands which contain only a small amount of oil do not transmit oil readily through their pores. Less oil is left in a sand from which oil has been displaced by water drive than would be left by a gas drive. In water-drive fields it is important that the production be slow enough to permit the water to flood the fine as well as the coarse sands. Gas caps should not be permitted to decrease in size due to production at excessive gas-oil ratio. Wells are important mechanical units, and must be completed properly and kept in proper repair.

The wells in an oil reservoir are the important mechanical units through which oil must be withdrawn, and which provide information necessary for the efficient control of the reservoir. In every field there is a zone into which oil naturally migrates under the force of an efficient gas or water drive, and it is within this zone that wells assume their greatest importance. In locating and completing wells, the most important consideration should be the control of the displacement of the oil by gas or water. The number of wells is of minor importance, except insofar as a sufficient number must be drilled to provide for adequate control.

The efficiency with which oil is displaced depends upon the nature of the reservoir and upon a few factors which are subject to control. To obtain high oil recovery, the following conditions should be met:

1. The rate of production should be low enough to permit production by water drive rather than by gas drive.

2. The velocity of the displacing fluid should be slow enough to permit the capillary and gravitational forces to maintain a substantially uniform rate of displacement through all oil-bearing sands.

3. When multiple zones of oil-bearing sand are present, the displacement of oil can be carried out most efficiently by producing one zone at a time.

4. The gas and water must be conserved; and, unless the reservoir contains an ample supply of these fluids to provide for the displacement of all recoverable oil, it may be advised to return at least a portion of the gas or water produced to the reservoir.

5. Production operations should be carried on in such a manner as to keep the recoverable oil concentrated in as small a part of the sand as possible.

6. Strategic location of wells, and proper completion and workover of wells and control of production rate, are necessary to the efficient production of oil.

●

Galvanic Corrosion of Dissimilar Metals in Salt-Water Solutions

H. R. COPSON (International Nickel Co.).

MANY dissimilar metals are in contact in oil wells. As the wells often contain a brine solution, which readily would permit a flow of current, an investigation of the galvanic effects between these metals is pertinent. For this purpose the general principles involved in galvanic corrosion have been reviewed, and the results of some galvanic tests with oil-well materials have been presented. The conclusions drawn are that in aerated brines: (1) The galvanic effects produced by coupling different grades and tempers of carbon steel with each other are negligible; (2) when carbon steels (drill pipe, casing, and tubing) are in contact with alloy steels (used for casing and tool joints) the potential differences are always in such direction as to protect the alloy steels; (3) in such galvanic couples the corrosion of the anode is controlled by the total area of the metals exposed; and (4) the lack of oxygen in most oil wells suppresses the galvanic effects.

●

Depth Measurements by Means of Multiple-Strand Wire Lines

HENRY EMMETT GROSS and J. P. HAYS (A. & M. College of Texas).

DEPTH measurement of bore holes by means of multiple-strand wire lines is described in detail, so that measurement by this means may be done precisely. Troublesome items and pitfalls are stressed. Procedures set forth have conformed with best oil-field practices and, if followed, should give correct depth.

There are definite relationships existing between the factors discussed under the topics in this paper. They are advanced as follows:

1. If a depth measurement of a hole is taken

both by the sand line and the drilling cable, and the two measurements check within 1 ft. on a 4,000-ft. well, a satisfactory depth of the hole is established.

2. If both cable and rotary tools are operated jointly on a well, the depth by drill pipe and wire line should check within 1 ft. at 4,000 ft.

3. In order to assure accuracy in making magnetic surveys, it is suggested that the coring line be "strung" into the well frequently, and checked against drill-pipe measurements.

4. As the multiple-strand wire lines used in drilling and those used with special measuring devices possess qualities innate to both, depth and measurements made by the two methods should check closely.

5. Well depths determined by any of the multiple-strand wire lines common in drilling practice are subject to errors, if the specifications set forth in this paper are not followed.

6. In the case of special measuring devices, errors inherent in counting mechanisms resulting from inertia slippage and incorrect diameter of measuring sheaves and lines require adjustments to the positive and precise measurements that should be obtained with the drill pipe or cable.

7. When precise depth measurements are necessary by means of the multiple-strand wire line, it is evident that good workmanship must prevail.

●

Problems Entering Into the Selection Of Steel for Oil-Production Tools

H. W. McQUAID (Republic Steel Corp.)

ATTENTION is called to the many problems other than chemical specification involved in the selection of the best steel analysis for oil-production equipment. Written for the designing engineer, the metallurgical factors in the selection of steel for oil production are treated in an elementary way.

The fundamental relations of carbon content, hardenability control, hardness, and toughness are discussed also.

The importance of design is stressed, with a recommendation for closer cooperation between the designing engineer, the production engineer, and the metallurgical department in the initial development of oil-production equipment.

●

Development of a New Thread Lubricant

H. J. BECKERT and W. M. FRAME (National Supply Co. Spang Chalfant Division)

BECAUSE of dissatisfaction with the lubricants used on pipe threads, a drastic leak test was devised in which 2-in. pipe specimens were tested with internal-gas pressure at different temperatures, and with the specimens subjected to vibration. The results of tests on 148 specimens made up with 11 different thread lubricants are given.

The results of these tests proved that the usual zinc-thread lubricant is entirely inadequate for resisting leakage under these test conditions. No other available thread lubricant was found which met all the requirements; therefore, it was decided to develop a new one.

Ideal requirements for a thread lubricant were established, and a lubricant was developed which met these requirements as demonstrated by test. This lubricant consists of 50 per cent aluminum-soap grease and 50 per cent natural Mexican clay-base graphite composed of both coarse and fine particles. This grease is being manufactured by one of the large grease makers, and is being used on certain classes of both welded and seamless pipe.

The purpose of this report is to describe this grease and its development so that anyone who so desires can manufacture and use it.

●

Engine Cooling

EARL B. CLOSSON (Barnsdall Oil Co.) and HERBERT WIRSHING (Waukesha Motor Co.)

THIS paper is a discussion of gas-engine jacket-water cooling methods. It points out the opportunities for increased operating efficiency through thermal improvement, and stresses the idea that, through improved cooling, the engine operator may do his best maintenance work; for the condition of the cooling system is reflected throughout the entire machine. Emphasis is placed on the merits of high jacket-water temperatures.

There are three principal types of cooling systems: Radiator, heat-exchanger, and enclosed coils in cooling towers.

Radiator cooling demands consideration of jacket-water circulation, core size, fan size, and temperature regulators.

The shell-and-tube heat exchanger should be given consideration in installations wherein the engine is used to pump liquids.

Cooling towers, when available, provide a facility for highly satisfactory engine cooling. Enclosed-coil systems take care of themselves, reducing the maintenance problem.

"Vapor phase" cooling makes use of the latent heat of water. By a simple arrangement, it becomes possible not only to operate the engine at high temperature, but automatically to maintain this temperature through any range of engine output and ambient temperature.

Water problems demand consideration if the jacket-water system is to operate effectively.

This presentation emphasizes the advantages of higher-range jacket-water temperatures, with jacket water carefully selected and maintained by diligent prevention of the entry of air or carbon dioxide to the cooling system.

●

Setting Depths for Casing

BLAINE B. WESCOTT (Gulf Research & Development Co.), C. A. DUNLOP (Humble Oil & Refining Co.) and E. N. KEMLER (Gulf Oil Corp.)

THE advent of deep drilling has served to emphasize that the design of casing strings is an engineering problem. For this reason it is essential that minimum performance characteristics of casing be established and used, rather than the average properties. It is only by this procedure that confidence can be placed in the factors of safety computed. The test data were analyzed critically, and minimum performance properties of casing calculated which are proposed for use until additional test data permit the establishment of higher permanent minimum values. The necessity for basic revision of the A.P.I. pipe specifications to meet present and future needs of the industry is pointed out. Factors to be considered in the design of casing strings for deep wells are discussed in as much detail as present knowledge warrants.

●

Questions and Answers

Eliminating Hydrogen Sulfide Produced With Gas

Is there any method at a moderate cost by which I could eliminate the hydrogen sulfide produced with the gas from a well located in Kentucky? I have been told that an ordinary joint of casing installed perpendicularly and filled with a solution of soda and steel filings would do this.—J. W. T., Paintsville, Ky.

There are several methods of removing hydrogen sulfide from gas, the most common being treatment with iron oxide, treatment with caustic soda, and the treatment with lime and a combination of these. In addition, there are numerous commercial processes for gas purification although the latter are designed for large scale processes where the investment per 1,000 cu. ft. to be processed is very low.

Methods commonly used today pass the gas through a vessel containing lime water or caustic soda and iron millings. The rate of reaction between the lime and the hydrogen sulfide is not particularly fast and ample contact space must be provided. The lime has one advantage in that it is cheap. For small systems a 50-gal. drum about three-fourths full of lime water can be used with the gas being introduced at the bottom and removed from the top. A second barrel can be used for a dryer.

Where there is much gas to be treated the solution of sodium hydroxide (caustic soda) is preferred. A piece of 12-in. casing about 6 ft. high in which there is about 12 gal. of 6 to 8 per cent sodium hydroxide solution and as many iron filings and millings as the vessel can hold, will be suitable for the treatment of several thousand cubic feet of gas daily, provided the gas does not contain abnormal amounts of hydrogen sulfide. The iron provides more contact space and is also attacked by the hydrogen sulfide to produce ferric sulfide. Hydrogen sulfide content of the gas may be reduced to a few grains per 1,000 cu. ft. by this method.

It is suggested that a drying vessel or volume tank be used as there may be some carryover from the treating vessels. Most operators using this method employ two treating tanks and two drying vessels, thus permitting continuous operation while charging the vessels with new caustic solution and iron filings. Lead acetate papers can be used to tell when the treater is losing its effectiveness and needs recharging.

Of course, the amount of treatment and the construction of the treater are determined by the number of grains of hydrogen sulfide contained in the gas per 1,000 cu. ft. and also the amount of gas to be handled daily. A sample of the gas may be sent to the Bureau of Mines, or your state chemist, for analysis and the treatment based on his findings. There are also tests which you can make yourself.

If further information is needed on this subject, be sure to include the amount of gas handled and the amount of hydrogen sulfide it contains. For a small volume of gas the above treatment will probably be sufficient.

Cathodic Protection of Condensers and Coolers Utilizing Brackish Bay Water

By W. A. S. WRIGHT and J. H. BROOKS
Union Oil Co. of California

ABSTRACT

Rapid failure had occurred in red-brass tubes installed in a surface condenser operating on brackish bay water. These failures were attributed to deposit attack caused by the entrance of foreign material into the tubes.

The red-brass tubes were replaced with admiralty metal, and a system of cathodic protection installed based on an impressed current of 2.5 amperes per 1,000 sq. ft. of tube surface. Some minor pitting of the tube ends has occurred since cathodic protection was applied; but, after 14 months of service, no failures have occurred, and no serious depreciation has been reported.

Cathodic protection has been applied also to additional refinery cooling equipment, and during 16 months of service no failures of tubes have occurred.

THE cathodic protection of condensers is not a new development, as it has been employed by various power plants for about 30 years; but it is only comparatively recently that this system of protection has been extended to refinery equipment. In view of this fact it may be of interest to discuss briefly the protection of a horizontal two-pass divided water-box condenser located in a refinery on San Pablo Bay near San Francisco, Calif.

In this condenser brackish bay water is used for condensing, under vacuum, exhaust steam from the pumps servicing a cracking unit. Under average operating conditions the salt-water inlet temperature is 55° F., whereas the outlet temperature of the condensate is 95° to 100° F. The rated capacity of this condenser, which has a tube area of 2,800 sq. ft., is 40,000 lb. of steam condensed per hour, with a water circulation of 2,450 gal. per minute.

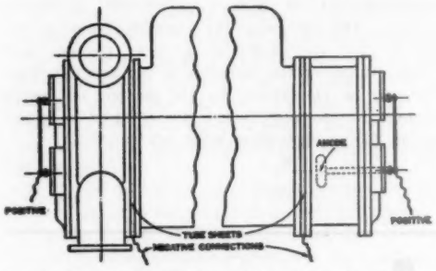


Fig. 1—System of cathodic protection for exhaust-steam condenser—elevation

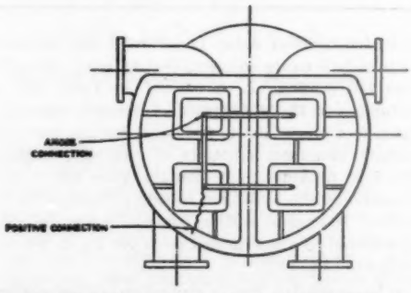


Fig. 2—System of cathodic protection for exhaust-steam condenser—end view

The tubes are approximately 16 ft. long and, at the inlet end of each pass, are rolled into the tube sheet and flared; whereas at the outlet end the tubes are packed with metallic packing (without ferrules). The tube sheets are of Muntz metal; whereas the shell, water boxes, water-box cover plates, and hot well are constructed of gray iron. In this condenser salt water flows through the tubes, and steam flows around the tubes through the shell.

Early Tube Failures

The red-brass tubes originally installed were not given cathodic protection, and failed rapidly. The chemical analysis, grain size, and physical properties of the tubes were normal for this class of material. The first tube failures were reported after 6 months' service; whereas within 1 year about half the tubes had developed leaks, and most of the remaining tubes were pitted severely. The majority of failures occurred in the first pass tubes located in the corners formed by the horizontal and vertical water-box division plates. Other failures were scattered throughout the first and second passes.

The tubes showed no appreciable corrosion of the outside surfaces, but the inside surfaces were covered with a light deposit of sediment and corrosion product, beneath which there was evidence of mild erosion. There were also numerous small pitted areas along the tube surface and, in addition, several regions where intense localized pitting had penetrated the tube wall. Associated with the latter were loose spongy deposits of copper, which are indications of dezincification, and, in addition, small deposits of sand and debris. The severe pitting of the interior surface of these tubes was believed due to deposit attack, a form of localized corrosion caused by oxygen-concentration cells. Ordinarily, in this form of attack, areas shielded by foreign bodies becomes anodic with respect to surrounding areas, due to a reduction of the oxygen content.

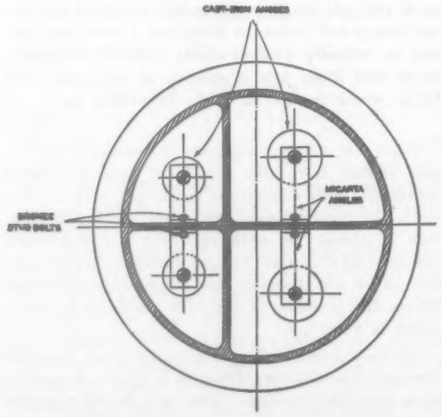


Fig. 3—Details of assembly—end view

A.P.I. **—Presented before midyear meeting of the A.P.I., Refining Division, Fort Worth, Tex., May 27-31, 1940.**

After the various phases of this corrosion problem had been investigated, it was decided to replace all of the tubes in this condenser with admiralty metal. Screens also were provided to prevent foreign materials from being carried into the tubes, and a more rigid inspection and cleaning program was initiated. In addition, cathodic protection was applied to the entire condenser in order to prevent, in so far as possible, further corrosion.

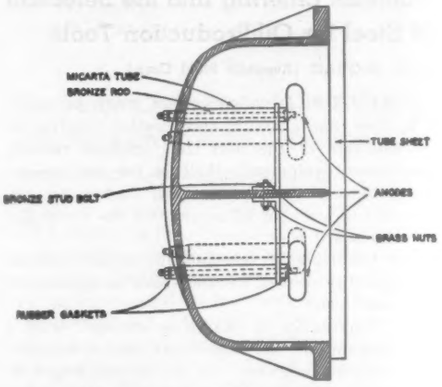


Fig. 4—Details of assembly—sectional view

It is well recognized that slight dissimilarities in metals, or in surface conditions of the tubes, set up galvanic action with the salt water as the electrolyte—resulting in the solution of the zinc and the subsequent deposition of copper as a spongy mass. This attack on the metal can be minimized if the potential of the water is raised to a point sufficiently higher than the potential of the galvanic couple, by the introduction of an external source of potential.

It is possible to increase the potential of the water with reference to the tubes and tube sheets by the installation of cast-iron electrodes in water boxes. These electrodes are insulated from the frame of the condenser and connected to the positive terminal of a direct-current source, with the negative terminal connected to the tube sheets.

Details of Protective System

The general arrangement of this protective system is shown in Figs. 1 and 2. One anode was installed in each door; thus four anodes connected externally by a bus bar were required for each end of the condenser. The cast-iron anodes are approximately 2.5 in. thick, and have sufficient area for good current distribution over the tube sheet. It has been found that a spacing of from 3 to 4 in. from the tube sheet represents the best compromise between uniform current distribution, minimum

40,000 FEET OF RACKING SERVICE

... NOT A CENT FOR REPAIR

Here you see the first BAASH-ROSS Type 2RS Roller Kelly Drive Bushing, delivered a year ago. When inspected the other day it had completed more than 40,000 feet of hard service—with only regular greasing as maintenance, and NOT A CENT FOR REPAIR. The original parts are still good for many thousands of feet of additional service—and when the time for reconditioning does come, the cost will represent a very small fraction of a cent for each foot of hole drilled.

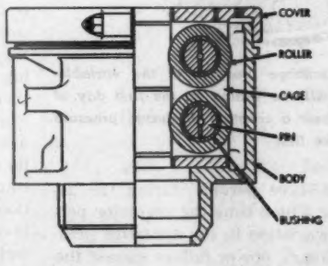
IMPORTANT IMPROVEMENTS— HEAVY CONSTRUCTION

The dozens of other BAASH-ROSS Type 2RS Roller Kelly Drive Bushings we have delivered in the past year are giving the same kind of economical service. The reason for their success is in their design. They have packed into them all of the good qualities that BAASH-ROSS have developed in roller kelly drive bushings through years of experience in building them, PLUS the new features, improvements, and far heavier construction necessary for lowest-cost, long service under high speed, heavy torque-load deep drilling with modern "super" rigs.

BUILT FOR MODERN HIGH SPEED HEAVY-TORQUE DRILLING

Here are the highlights on the BAASH-ROSS Type 2RS Roller Kelly Drive Bushing:

• Extra large diameter rollers (two in each cage) distribute the torque to the kelly, protecting its driving surfaces through reduced unit pressure. The rollers are made very hard to resist wear on their O. D. • High-hardness replaceable roller bushings eliminate wear on the I.D. of the rollers • Oversize reversible hardened-and-ground roller pins give double service life and eliminate pin breakage. • Adequate lubrication insured by individual grease ducts to the moving surfaces of each roller assembly.



SEND FOR ILLUSTRATED BULLETIN

or refer to pages 165 to 167 of your 1940 Composite Catalog for engineering details and complete description of the BAASH-ROSS Type 2RS Roller Kelly Drive Bushing.

IT WILL PAY YOU TO CHANGE TO THE NEW

BAASH-ROSS Type 2RS ROLLER KELLY DRIVE BUSHING

WHY NOT WRITE FOR FULL INFORMATION, TODAY?

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TOOL COMPANY

OIL WELL TOOLS · SPECIALTIES

LOS ANGELES

HOUSTON · NEW YORK

resistance to water circulation, and satisfactory conductivity.

The spacing of the anodes is shown in Fig. 3, together with the Micarta supporting angles used for attachment to the condenser head. Details of construction are shown in Fig. 4. The cast-iron anode is threaded to a bronze rod, which is protected from current leakage by means of a canvas-reinforced Micarta sleeve. The leakage of water is prevented by the installation of rubber gaskets between the sleeve and the anode, and between the sleeve and the exterior washer and nut. The Micarta sleeve is threaded into the shell, using a tapered pipe thread. This type of construction is sufficiently rigid, and permits ready renewal of any or all parts of the anode assembly for inspection or replacement.

The staybolt nuts were a problem, as they projected 2⅞ in. from the face of the tube sheet, and would have a tendency to increase the current considerably—making it necessary to insulate the nuts. This problem was solved by taping the nuts with rubber tape followed by friction tape, and then painting them with Glyptal lacquer. The surfaces of the nuts were covered completely on both the front and sides to prevent current leakage to the nuts. This protection system was used because it eliminated the necessity of molding suitable rubber caps.

Operating Conditions

Preliminary tests were made with a battery in order to obtain the data necessary for the installation of the proper type of rectifier. In this preliminary test, it was found that a voltage of 4½ volts was required to pass 7 amp. through the circuit, which is based on 2½ amp. per 1,000 sq. ft. of surface. A copper-oxide rectifier, having a variable-current range from 0 to 10 amp. and a direct-current voltage of 5 to 10 volts, was used; because this range was considered ample to allow for changes in resistance due to variable salt-water concentrations, temperature fluctuations, and variations of scale deposits on the electrodes and in the tubes.

The cast-iron electrodes are decomposed at an average rate of 0.1 oz. per operating hour, or about 35 lb. per amp.-year; and they were installed, therefore, in such a manner that replacement could be made readily at shutdown periods.

Protection Afforded by the System

The cathodic protection of this condenser has been in service about 14 months, and to date there have been no tube failures; but there has been mild corrosion as evidenced by slight pitting of the internal surface, which is developing at a slow rate. It was suggested that this pitting may be due to spacing of the anodes too close to the tube sheet, with the resulting turbulence liberating air dissolved in the circulating salt water; but careful inspection of the tubes failed to verify this type of depreciation. There has been some scale deposition in the tubes—which is advantageous, as it has an insulating effect, and results in the current being carried further into the tubes.

It is recognized that several changes in operating conditions have been made simultaneously, and the relative effect of each on service life is unknown. These changes were:

1. Substitution of admiralty tubes for red brass.
2. Installation of cathodic-protection equipment.
3. Use of strainers in salt-water line.
4. More rigid inspection and cleaning program.

There is evidence that the screening in the circulating line has not been entirely effective; for, at the time of a recent inspection, some mussels and other marine growth were found lodged in the water boxes and in the tubes themselves.

It is known that the combination of changes has prolonged the tube life, but is is difficult to state just how much of this increase is due to cathodic protection. Inasmuch as this installation was made for the protection of operating equipment, and not merely for the development of scientific data, no consideration has been given to the elimination of cathodic protection just to determine how soon failure would occur without this protection.

Installation of Additional Units

Cathodic protection has been applied also to four new fresh-water coolers, tubed with admiralty metal, and operating on salt water from the same source. In this particular equipment it was practicable to install the anodes in one end only—which was unfortunate, as the complete elimination of corrosion is dependent upon the current reaching all parts of the surface requiring protection which, even under the best conditions, is difficult to accomplish in the case of long tubes. These coolers have been in service for more than 16 months, and no tube failures have been reported.

●

Variable-Stroke Triplex Pumps Used on East Texas Line

(Continued from Page 31)

In Fig. 2 is shown a chart of the discharge pressure of the Kilgore pump during its first day of operation. This chart shows that the discharge

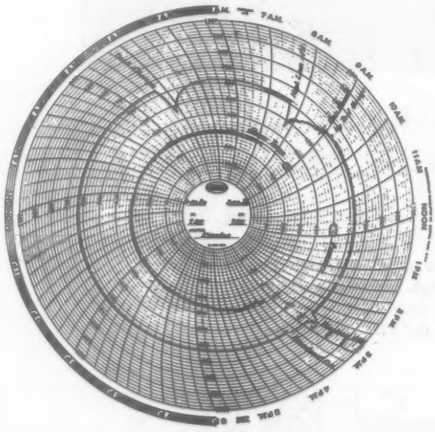


Fig. 2—Chart of discharge pressure of the variable-stroke pump at the Kilgore station on the first day of operation, showing how a constant discharge pressure was realized from the first

pressure varied at three periods during the 24-hour period, during which time the regulator permitted 10 per cent variation in the discharge pressure. At about 7:45 a.m. power failure caused the pump to go to no-stroke so that the discharge pressure declined, but as the pen was reset the discharge pressure continued at about the 650-lb. mark. Later in the day when the Pineland station was shut down the discharge pressure increased about 65 lb. due to the added load, but soon declined to normal as the controller operated so as to reduce the discharge pressure. When the Pineland was again placed on line ½ hour later a slight, momentary decline is shown. The other break in the curve is shown at 4 a.m. when the tank from which the pump was taking suction was changed.

As stated, during the first day of operation the controller was set for 10 per cent variation. Since then, however, the percentage of permissible variation has been reduced to only 2 per cent so that charts taken on the discharge pressure show practically no variation from the 650-lb. mark.

The Pineland station's pump, as stated, is synchronized with the Kilgore station by the controller operating on the suction side. The control equipment here is adjusted to maintain a pressure of about 100 lb. on the intake side of the pump. If the pump at Kilgore should be operating at a faster rate than the Francis station, the additional fluid will build up a greater pressure at the intake of the latter pump. The effect of the higher pressure is to increase the pressure differential so that the pump will automatically increase its stroke until the gasoline is discharged at the same rate it is being received.

In Fig. 3 is shown a simplified diagram of the pump connections at the Pineland station. The

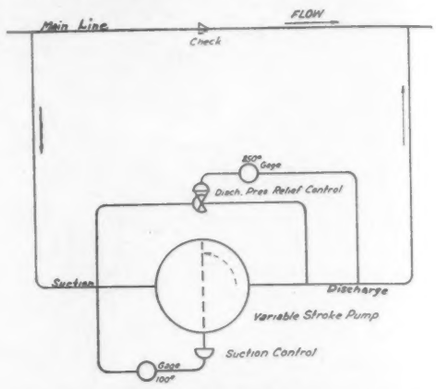


Fig. 3—Simplified diagram of the pump connections on the variable-stroke pump at Magnolia Pipe Line Co.'s Pineland (intermediate) station

connections are arranged so that the station may be bypassed temporarily through the check valve in the main line if the pump should be shut down. Also the pressure relief controller on the pump discharge permits bypassing of the butane, as the controller is set at 850 lb. and if the pressure varies as much as 2 per cent (17 lb.) from this figure the device operates as explained in the previous paragraph.

Construction and Operating Economies

While the main feature offered by the pumps is the flexibility of capacity and their high efficiency over a wide range of operating condition, they also permit certain construction and operating economies. Since they are sufficient within themselves to meet changing line conditions, no work tanks are required so that the volatile product is kept within the confines of the line from its point of entry until it is discharged. This, of course, does away almost entirely with evaporation losses and eliminates much of the danger involved in handling a highly inflammable material.

In this connection extreme precautions were taken to permit safe operation at the two stations. Each has an automatic pressure bypass consisting of a relief valve set for maximum pressure and leading to a vent line. Blowout heads are installed on the suction and discharge lines, which also lead to the relief line. To prevent any vapor escaping from the vent line, a control pilot light is placed at the end of the line to burn any escaping vapors. Also remote controls are provided for stopping the pumps and closing the head gates on the station. In event the air supply used for the automatic controls should fail, the pumps likewise are turned to zero-stroke.

FIELD OPERATIONS

Summarizing the Week's Developments

TEXAS: Gulf Coast—The recently opened Lolita field in Jackson County was given a 1½-mile extension in the past week. The discovery well flowed 41 bbl. per hour. The extension well, in the same pay, was flowing oil but had not been gaged. A wildcat in the Alta dome area blew out with a large volume of gas and about 500 bbl. of fluid. On the Louisiana side of the coast the South Roanoke field was extended.

Southwest Texas—A producing spot 1½ miles east of the Flour Bluff field was opened by a well making 178 bbl. of high-grade oil per day from Frio sand.

West Texas—New oil-producing areas are in prospect in three counties in West Texas. A well in Tom Green County made 64½ bbl. of oil in 10½ hours. Another in Crane County was drilling below 3,358 ft. with 400 ft. of oil in the hole, and the third in Andrews County was drilling ahead with considerable oil showing.

West Central Texas—Seven locations for offset tests in the two recently opened areas in Jones County led the development for the district. Three locations were made in the Farrell area and four in the Tripplett area.

North Texas—Offering the most encouraging results in several weeks, outposts to both the Omohundro and the Sinclair Prairie areas in Montague County have casing cemented on top of saturation and are preparing to drill plugs. The two wells will mark the first completions since the discovery wells in each of the areas.

East Texas—Completion of the third well in the Willow Springs area of Gregg County for 80,000,000 cu. ft. of gas, together with the promise of a test in the Moss Pettit lime area in Camp County and the staking of three new Woodbine sand wildcat tests, added to a busy week in eastern Texas.

ILLINOIS—Gulf Refining Co. completed two wells in the Centralia field with a combined potential of more than 10,000 bbl. Centralia hit a new production peak, but Salem's production dropped sharply and was 50,000 bbl. per day below the peak of that field. One hundred and ten new operations in the state were reported.

KANSAS—Pools were opened in Rice and Ellsworth counties and a pool in McPherson County was fully proven by a production test. All three are close to other pools.

OKLAHOMA—Eight wells in the Wilcox sand in Oklahoma City were near completion, but the best well finished in the state last week started at 960 bbl. per day. It was in Section 36-10-4, Pottawatomie County.

MICHIGAN—Allegan County led all districts in completions with 8 out of the state's 19 new oil wells.

LA-ARK-TEX—The Olla pool in La Salle Parish, Louisiana, was extended one location south.

MONTANA—A 320-bbl. well was completed in the Lander pool west of Cut Bank.

CALIFORNIA—Texas Co.'s wildcat in the Cantua district in Fresno County, which has shown 4,000,000 cu. ft. of gas on a formation test, was being swabbed after the crew had succeeded in obtaining a water shutoff.

Completions in All Fields

(Week Ended May 25, 1940)

	Oil	Gas	Dry	Total	1940 total comp. to date	1939 total comp. to date
N. Y., Pa., and W. Va.	69	13	3	85	1,574	1,220
Ohio	9	8	8	25	415	360
Indiana	0	0	7	7	139	74
Kentucky	3	0	2	5	177	242
Illinois	62	1	7	70	1,369	1,329
Michigan	19	0	4	23	515	497
Kansas	8	0	2	10	610	441
Oklahoma	18	1	4	23	715	722
Texas:						
North Central Texas	45	0	31	76	1,306	938
West Texas	37	0	2	39	901	754
Texas Panhandle	10	4	0	14	243	156
East Texas	7	0	0	7	117	212
East Central Texas	1	3	2	6	108	105
East Texas Border	1	0	0	1	24	27
Gulf Coast Texas	28	1	6	35	538	553
Southwest Texas	28	0	11	39	931	965
Total Texas	157	8	52	217	4,168	3,710
North Louisiana	9	0	2	11	238	210
Gulf Coast Louisiana	16	0	6	22	368	228
Total Louisiana	25	0	8	33	606	438
Arkansas	1	0	0	1	85	94
Montana	4	0	0	4	64	52
Wyoming	5	0	0	5	62	39
Colorado	0	0	0	0	7	3
New Mexico	13	1	1	15	286	239
California	14	2	3	19	450	379
Total United States	407	34	101	542	11,242	9,839
Total previous week	405	43	146	594		
Week ended May 27, 1939	360	38	115	513		

Outstanding Fields—Highlights

(Week Ended May 25, 1940)

FIELD—	Rigs up	Wells drlg.	Weekly oil completions	Initial prod.	Total No. oil wells	Daily av. prod.
TEXAS						
K.M.A.	35	56	8	4,311	1,363	40,297
Hull-Silk	19	59	12	10,014	253	6,646
Wasson	15	48	7	6,295	818	32,426
Ector County	22	69	11	15,741	2,124	58,497
Jones County	8	13	6	434	622	8,600
East Texas	9	12	7	253	25,995	396,448
OKLAHOMA						
St. Louis	3	15	0	0	882	29,150
Cement	2	17	0	0	307	7,250
KANSAS						
Bemis	1	7	1	3,000	316	7,100
Burnett	2	12	3	9,000	91	5,510
Silica	2	10	3	3,955	628	10,500
Trapp	4	13	8	15,476	535	12,250
NEW MEXICO						
Lea County	17	43	9	4,189	2,469	88,350
Eddy County	8	71	4	226	567	19,250
LA-ARK-TEX						
Cotton Valley, La. (deep)	1	2	1	430	160	15,515
Olla, La.	1	9	2	380	9	1,360
Golden Meadow, La.	2	15	3	511	83	10,900
MICHIGAN						
Allegan County	4	30	8	1,364	481	7,959
Kent County	5	19	2	250	309	14,890
CALIFORNIA						
Montebello	1	12	0	0	359	22,250
ILLINOIS						
Salem	24	104	26	25,099	1,968	240,984
Louden	6	35	12	3,279	1,469	77,214
Other basin fields	20	300	24	18,435	2,729	104,550
Old fields	....	.....	....	.....	.....	10,984
MISSISSIPPI						
Tinsley	2	7	2	470	53	8,151

Illinois, Indiana and Kentucky

By STAFF CORRESPONDENT

Centralia Hits a New Peak; Decline in State Production

MATTOON, Ill., May 27.—Two big wells completed by Gulf Refining Co. in the Clinton County side of the Centralia field did much to increase the production of that field to 31,136 bbl. a day, a new peak. Centralia's production increased 4,848 bbl. per day during the week. One of Gulf's big wells flowed 5,567 bbl. in 24 hours, after an acid treatment in Devonian lime and another flowed 658 bbl. in 3 hours, or at the rate of 5,264 bbl. per day. The production of these wells was about six times as much as the average production of Centralia's crop of Devonian wells and as Samedan Oil Co. also brought in a 2,160-bbl. well, after an acid treatment, in the same part of the field in which the Gulf gushers were drilled, it looks as if those geologists were right who said that portion of the field would produce the largest Devonian wells in Centralia. In addition to the pair of big producers Gulf completed a number of others on its Buehler leases and is said to have more than enough production to fill its pipe line out of the field. Eight Devonian lime wells were completed in Centralia last week, their total actual initial production was 14,381 bbl., some of the wells flowing less than the full day.

Production Declines

Production in the state fell off 2,334 bbl. per day last week to a total of 433,732 bbl. Salem with 240,984 bbl. declined 7,226 bbl. per day. Louden with 77,214 bbl. increased 400 bbl. Centralia with 31,136 bbl. increased 4,848 bbl. Other basin fields, with 73,414 bbl., declined 277 bbl., while the old fields fell off 79 bbl. per day to 10,984 bbl. The production of the Salem field, 240,984 bbl., was 50,140 bbl. per day below the peak reached in the week ended March 16, 9 weeks ago.

Sixty-two new oil wells were completed in the state during the week, one gas producer and seven dry holes. The Devonian lime completions in Salem numbered 19 with a total initial production of 23,056 bbl. Seven Salem wells were completed in upper pays with a total initial of 2,043 bbl.

Centralia's Trenton lime test, Ames & Hicks' No. 1 Brown, Lot 10, Block 5, Home Terrace addition in the Marion County side of the field, which had reached the contract depth of 4,000 ft. without finding its objective was refinanced by a number of interested operators who wished to see the Trenton lime tested, and at the week end was drilling at 4,002 ft.

New Pool in White County

Sun Oil Co. opened a pool in White County with its No. 1 Clarence Brown, C S½ SE NW Section 2-4s-9e, which flowed 618 bbl. in 18 hours from McClosky lime topped at 3,337 ft. The pay is said to have been at 3,370-75 ft., the total depth. The well had not been acidized. The discovery is about 7 miles west and a little north of the Calvin field and opens up a lot of undeveloped territory.

A Wayne County completion, the news of which came too late for the regular completion report, was H. H. Weinert, Inc.'s No. 4 Muhlbach, SW NW Section 34-1s-7e, which flowed 450 bbl. in 24 hours from McClosky lime, depth not ascertained. Other new Wayne County wells included Pure Oil Co.'s No. 2 Gill, in Section 21-2n-6e, 280 bbl.; Robinson's No. 2 Felix, 230 bbl.; Pure's Staley well, 280 bbl.; Texas Co.'s No. 2 Clark, Section 34-1s-7e, 410 bbl., and Aulich's No. 1 Dickey, which pumped 100 bbl.

One hundred and ten new operations in Illinois were announced in the past week. These include locations, derricks up and wells drilling. Marion County leads with 37 in Salem and 4 in other county areas; Louden, in Fayette County, 14; Centralia, Clinton County, 15; Wabash County, 8; Clinton County outside of Centralia, 3; White County, 5; Clark, Madison, Clay and Washington counties, 2 each; Cumberland, Effingham, Jasper, Crawford, Richland, McDonough, Edwards and Wayne 1 each; Hamilton and Bond counties 3 each.

Following is the week's completion report, the initial production representing 24 hours unless otherwise given:

Centralia Field

In the Centralia field, Clinton County, Gulf Refining Co.'s No. 19 S. Buhler, SE SE NW Section 12-1n-1w, had Devonian pay at 2,910-22 ft., was acidized with 3,000 gal., and flowed and pumped 1,637 bbl. of oil and 1,300,000 cu. ft. of gas. Gulf's No. 18 S. Buehler, NW SW NE Section 12-1n-1w, Devonian pay at 2,912-29 ft., and was acidized with 3,000 gal., and pumped and flowed 1,809 bbl. of oil and 1,440,000 cu. ft. of gas.

Fairhope's No. 3 Allison, NW cor. NE SW NE Section 12-1n-1w, flowed 824 bbl. in 23 hours from Devonian lime, total depth 2,919 ft., but was not a completion.

Samedan Oil Co.'s No. 3-A Buehler, C E½ NE SW Section 1-1n-1w, Devonian pay at 2,869-82 ft., acidized with 3,000 gal., flowed 2,160 bbl. in 24 hours. Gulf Refining Co.'s No. 17 South Buehler, C E½ SE SW Section 1-1n-1w, pay at 2,906-20 ft., flowed 88 bbl. per hour, naturally; but after a 3,000-gal. acid treatment it flowed 5,567 bbl. in 24 hours. Gulf's No. 1 Buehler Community, C E½ NW SW Section 1-1n-1w, flowed 110 bbl. per hour, naturally. Acidized with 3,900 gal., it flowed 658 bbl. in 3 hours through tubing, or at the rate of 5,264 bbl. per day.

Gulf Refining Co.'s No. 15 Buehler, in Section 12-1n-1w, had Devonian lime top at 2,864 ft., total depth 2,928 ft. It produced 450 bbl. a day. Gulf's No. 1 Adam, in Section 12, with Devonian lime top at 2,854 ft., and total depth 2,916 ft., produced 900 bbl. No. 16 Buehler, in Section 12, flowed 1,200 bbl. from Devonian at 2,864-2,922 ft. The pay section in the last three wells named was not available.

Shell Oil Co., Inc.'s No. 8-C Buehler, SW SE SW Section 1-1n-1w, was flowing at the rate of 70 bbl. per hour, naturally, while drilling below 2,910 ft., and Shell's No. 6-C Hausemann, C W½ SW SE Section 1-1n-1w, was flowing 12 bbl. per hour, naturally, from pay at 2,910-22 ft. It was to be acidized. Algona's No. 4 Marshall, NE cor. SE SW Section 12-1n-1w, pay at 2,921-27 ft., total depth, acidized with 3,000 gal. It would not flow at first and was swabbed for 2 days. It then flowed 250 bbl. in 16 hours. Jones & Jones' No. 1 Hook, SE cor. NE Section 13-1n-1w, was drilled to 2,601 ft. and plugged back to 2,914 ft. It was to be acidized in the Devonian lime.

Fourteen wells started drilling in the Centralia area in the past week and four derricks were built which will likely be converted into drilling wells within a week as all operators in the Centralia field seem anxious to get production as soon as possible.

Fayette County

In the Louden field, Fayette County, Carter Oil Co.'s No. 2 M. Doty, SW SE NW Section 2-8n-3e, shot with 5 qt. at 1,574-76 ft. and with 10 qt. at 1,510-13 ft.; 60 bbl.; pays are Cypress and Paint Creek sands. Carter's No. 4 Mae Taylor, SW NW SE Section 12-8n-3e, shot with 20 qt. in Cypress sand at 1,522-28 ft., pumped 72 bbl. Carter's No. 2 F. Doty, NE SE NW Section 13-8n-3e, shot with 40 qt. in Cypress at 1,507-20 ft., pumped 984 bbl. Carter's No. 6 H. Stead, NW NW NW Section 13-8n-3e, shot with 30 qt. in Cypress at 1,501-10 ft., pumped 372 bbl. Carter's No. 4 S. Rickett, NE NE NE Section 14-8n-3e, shot with 40 qt. in Cypress at 1,499-1,513 ft., pumped 528 bbl. Carter's No. 2 A. Ping, SW SW NE Section 16-8n-3e, shot with 15 qt. at 1,521-36 ft., pumped 76 bbl. of oil and 40 bbl. of water. Barney Whisenant's No. 16 Lilly, NE NW SE Section 16-8n-3e, shot with 30 qt. at 1,478-82 ft., pumped 77 bbl. in 12 hours. A. Whisenant's No. 17 Lilly, NE NW SE Section 16-8n-3e, 40-qt. shot at 1,564-80 ft., Paint Creek sand, flowed 130 bbl. in 6 hours. Carter's No. 2 E. Rhodes, SE SW SW Section 23-8n-3e, 40-qt. shot at 1,430-43 ft., pumped 336 bbl.; Cypress at 1,415-73 ft., Paint Creek at 1,502-07 ft., Bethel at 1,523-29 ft., total depth 1,530 ft. Carter's No. 8 E. M. Durbin, SE SE SE Section 28-8n-3e, shot with 20 qt. in Paint Creek sand at 1,578-84 ft., and with 30 qt. in Cypress at 1,498-1,508 ft. Bethel was penetrated at 1,566-85 ft., pumped 438 bbl. Carter's No. 4 L. Weaber, NW NW NW Section 28-8n-3e, shot with 40 qt. at 1,464-80 ft., Paint Creek sand, and with 10 qt. at 1,403-06 ft., Cypress sand, pumped 66 bbl.

Feinberg and others' wildcat, No. 1 Townsend, C SE NE NW Section 13-7n-2e, dry and abandoned at 1,484 ft. It was 84 ft. low on the Glen Dean lime, topped at 1,484 ft. Albert B. Green's No. 1 McDonald, NW NE NW Section 23-7n-1e, a wildcat, was abandoned at 675 ft.

In the southern part of the Louden field Texas Co.'s No. 4 Neathery, SE NE NW Section 6-6n-3e, 20-qt. shot in Cypress sand at 1,509-29 ft. and 20-qt. shot at 1,548-54 ft., pumped 140 bbl.

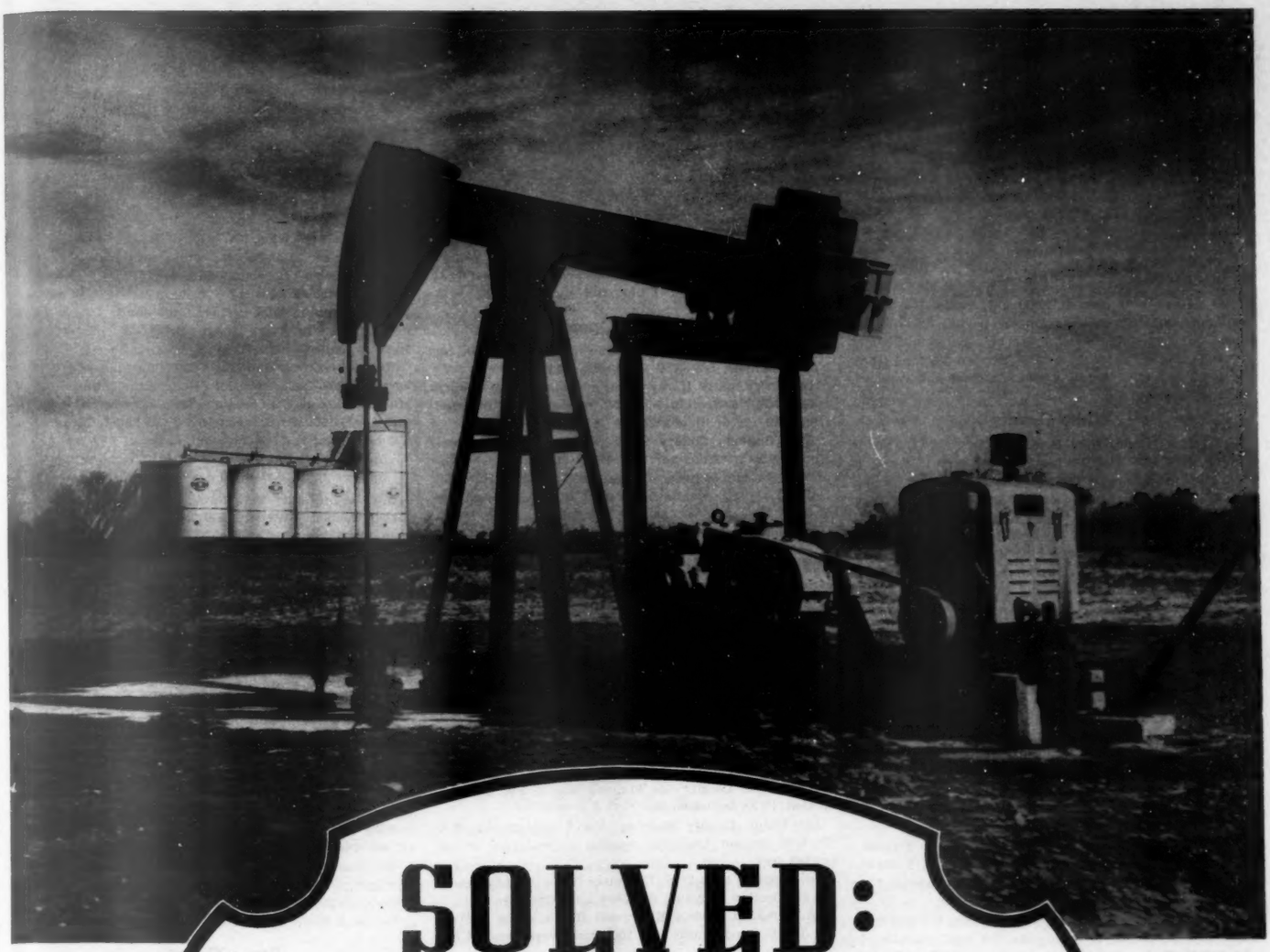
Marion County

In the Sandoval pool in Marion County Southwestern Oil & Gas Co.'s No. 12 Stein, had Devonian lime at 2,904 ft. and pay at 2,966½-67½ ft. It was acidized with 100 gal. and flowed 450 bbl. per day through ½-in. choke. Big Four Oil & Gas Co.'s No. 1 Chaffin, NW cor. NE NW Section 9-2n-1e, Devonian at 2,950 ft., total depth 3,012 ft., casing perforated at 2,996-97 ft., shut in without a production gage.

In the Salem pool in Marion County Texas Co.'s No. 10 Martin, SW SE SE Section 17-2n-2e, had McClosky lime at 1,990-2,057 ft. in streaks, pumped 126 bbl.; no acid. Blackstock's No. 3-C M.&I.R.R., shot with 150 qt. in Benoist and Aux Vases sands at 1,790-1,890 ft., pumped 200 bbl. Texas Co.'s No. 7 D. Buckley, C S½ NW SE Section 33-2n-2e, McClosky lime pay at 2,034-93 ft., at intervals, flowed 455 bbl. without acid. Texas Co.'s No. 30 L. Hawthorne, SE SW SE Section 5-1n-2e, McClosky 2,005-58 ft., at intervals, acidized with 2,000 gal., pumped 35 bbl. in 10 hours. Texas Co.'s No. 15 J. Carull, NW SE NE Section 6-1n-2e, Benoist at 1,710 ft., Renault at 1,744 ft., Aux Vases at 1,760 ft., total depth 1,810 ft., shot with 80 qt. at 1,730 to 1,810 ft., flowed 137 bbl. in 8 hours. Ohio Oil Co.'s No. 14 R. L. Murray, NE NW SW Section 7-1n-2e, McClosky lime at 2,037-61 ft., in streaks, pumped 140 bbl., not acidized. Rockhill's No. 18 Foster, SW SE SE Section 7-1n-2e, McClosky at 2,023-91 ft., at intervals, acidized with 4,000 gal., flowed 950 bbl.

Devonian Completions in Salem

In Township 2n-2e Kingwood Oil Co. and Bell's No. 24 Shanafelt-A, NW NE NE Section 20, Devonian pay at 3,398 ft., and better pays at 3,412 ft., total depth 2,439 ft., acidized with 5,000 gal., flowed 1,120 bbl. Texas Co.'s No. 8 Sweney, NE SW NW Section 20, pay at 3,414 ft., better pay at 3,472-3,500 ft., acidized with 3,000 gal., flowed 982 bbl. Magnolia Petroleum Co.'s No. 35 D. A. Shanafelt, NW NW NW Section 21, pay at 3,484 ft., total depth 3,512 ft., 4,000 gal. of acid, flowed 691 bbl. Magnolia's No. 104 J. H. Young, SE NW SW Section 21, pay at 3,465 ft., total depth 3,505 ft., flowed 776 bbl. a day, naturally; acidized with 4,000 gal., it flowed 1,176 bbl. Texas' No. 17 Chapman, NE cor. NW NE SW Section 28, pay at 3,435-70 ft., 2,000 gal. of acid, flowed 300 bbl. Texas' No. 20 R. Friederich, NW SW NW Section 29, pay at 3,444-80 ft., 5,000 gal. of acid, flowed 727 bbl. in 17 hours. Texas' No. 8 L. Maxwell B, SE NE SE Section 30, pay at 3,376 ft., total depth 3,421 ft., 3,000 gal. of acid, flowed



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Parkersburg 42ASP Pumping Unit.

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PARKERSBURG FAULTLESS FABRICATION

1,704 bbl. Texas' No. 8 Hopkins, NE NE SE Section 31, pay at 3,316-30 ft., 3,000 gal. of acid, flowed 1,675 bbl. Texas' No. 14 W. Stroup, SE NE NW Section 31, pay at 3,340-80 ft., 5,000 gal. of acid, flowed 2,220 bbl. Texas' No. 17 Richardson, NW NE SW Section 32, pay at 3,359-90 ft., 3,000 gal. of acid, flowed 970 bbl. Texas' No. 19 Richardson, SE SW NW Section 32, pay at 3,330-50 ft., 3,000 gal. of acid, flowed 1,470 bbl. Texas' No. 20 Richardson, SW SW NW Section 32, pay at 3,298-3,338 ft., 3,000 gal. of acid, flowed 600 bbl. Texas' No. 21 Richardson, SW NE SW Section 32, pay at 3,317-3,401 ft., 3,000 gal. of acid, flowed 1,453 bbl. Texas' No. 15 F. Stonecipher, NW SE SW Section 32, NW SE SW, pay topped at 3,381 ft., total depth 3,418 ft., 3,000 gal. of acid, flowed 2,767 bbl. Texas' No. 19 M. Williams, SW NW SW Section 32, pay at 3,298-3,336 ft., 3,000 gal. of acid, flowed 2,000 bbl. Texas' No. 20 M. Williams, SE NW SW Section 32, pay at 3,345-78 ft., 3,000 gal. of acid, flowed 1,401 bbl. Baldwin's No. 2 West Nation School, SW cor. NE Section 33, top of pay at 3,532 ft., total depth 3,546 ft., 2,000 gal. of acid, flowed 1,800 bbl.

White County

In White County New Penn Oil Co.'s No. 1 French & Son, NW SW NW Section 20-3s-8e, Aux Vases sand at 3,233-42 ft., pumped 193 bbl. Leo Horton and others' No. 1 Schoemann, SW SE SW Section 35-3s-9e, dry and abandoned at 3,520 ft. St. Louis lime was topped at 3,514 ft. Sun Oil Co.'s No. 1 Ford, NW NE NE Section 18-5s-14w of second principal meridian, old well deepened from 3,017 ft. to 3,144 ft., was dry and abandoned. In the Irons pool Carter Oil Co.'s No. 5 Poole, SW SE SE Section 24-6s-8e, Hardinsburg sand at 2,494-2,528 ft., shot with 60 qt., pumped 58 bbl. Shell Oil Co., Inc.'s No. 4 Austin, SW SE SW Section 24-6s-8e, Hardinsburg at 2,495-2,520 ft., shot with 10 qt., pumped 285 bbl. In the Storms pool Exchange Oil Co.'s No. 2 Rudolph, SE SE SE Section 11-6s-9e, Waltersburg sand at 2,269-75 ft., shot with 20 qt., pumped 331 bbl. Skelly Oil Co.'s No. 5 Storms, NE NW SW Section 14-6s-9e, Waltersburg at 2,231-55 ft., shot with 20 qt., flowed 133 bbl. of oil in 8 hours and produced gas at the rate of 12,000,000 cu. ft. per day. Bowers & Johnston's No. 1 Storms, NW SE NE Section 22-6s-9e, Waltersburg at 2,212-52 ft., flowed 120 bbl.; not shot.

In Hamilton County Kingwood Oil Co.'s No. 2 Dodd, NE SE NW Section 6-6s-7e, Cypress sand at 2,689-95 ft. and 2,697-2,717 ft., shot with 40 qt., swabbed 770 bbl.

In Gallatin County Carter Oil Co.'s No. 1 Vineyard, SW SE NE Section 21-7s-8e, was dry and abandoned at 3,165 ft. St. Louis lime was topped at 3,157 ft. Ralph Halbert abandoned a location in SE SE NE Section 29-8s-10e.

In Shelby County Werner & Dudley's No. 1 Prosser, C S½ SW NE Section 25-10n-4e, Ste. Genevieve lime top at 1,973 ft., total depth 1,979 ft., showing of oil at 1,902-05 ft., plugged and abandoned.

In Crawford County La Salle Drilling Co.'s No. 1 Berryhill, NE NE NW Section 9-6n-13w, total depth 2,976½ ft., plugged back to 2,805 ft., re-treated with 1,000 gal. of acid, pumped 25 bbl. of fluid, 50 per cent water. Devonian lime was topped at 2,789 ft. and Devonian pay at 2,794 ft.

In Clay County W. C. McBride, Inc.'s No. 1 Landreth, NW NW NE Section 27-5n-5e, was plugged and abandoned. It was drilled to 2,473 ft. It showed ½ bbl. of oil and 4 bbl. of water per hour; plugged back to 2,400 ft. and casing perforated at 2,312-17 ft. It swabbed only salt water and a small showing of oil.

In Lawrence County Bell Brothers' No. 1 Wampler, NW cor. SE SE NE Section 27-5n-11w, a Devonian lime test, was abandoned at 3,262 ft. Devonian was topped at 3,040 ft. It had small showings of oil at intervals from 1,725 to 3,135 ft. Bowman's No. 2 Lawless, C SE SW Section 18-4n-10w, an old well deepened from 1,125 ft. to 1,655 ft., total depth, was dry and abandoned. Ste. Genevieve lime was topped at 1,438 ft.

In Richland County Duncan Brothers' No. 1 Schilling, SE SE SE Section 32-4n-9e, Cypress sand topped at 2,596 ft., pay at 2,602-08 ft., casing perforated opposite pay, pumped 413 bbl. of fluid, 18 per cent water. It had not been shot. Pure Oil Co.'s No. 6 J. H. Wachtel-A, C E½ NE SW Section 6-4n-10e, Fredonia lime pay at 2,874-80 ft., flowed naturally 265 bbl. per day.

In Clinton County Benoist and others' No. 1 Huber, a wildcat, NW NW SE Section 36-3n-1w, had Benoist sand at 1,544-54 ft., total depth, and was dry and abandoned.

In Wabash County Mabee Drilling Co.'s No. 7 Bump, SE SE SW Section 4-2s-13w, shot with 40 qt. in Cypress sand at 2,403-24 ft., pumped 9 bbl. Bartlett and others' No. 5 Stansfield, NE SE SE Section 19-2s-13w, Cypress sand at 2,448-62 ft., shot with 20 qt., pumped 266 bbl. Longhorn Oil Co.'s No. 6 Heil, 2,660 ft. from north and 3,940 ft. from east lines of the SW Section 7-3s-13w, Cypress sand at 2,485-2,500 ft., shot with 30 qt., pumped 125 bbl.

In Monroe County Charles T. Judd's No. 2 Kolmer, SE cor. NW Section 24-2s-10w, had Trenton lime at 460 ft., a showing of oil at 460-510 ft., total depth 530 ft., dry and abandoned.

In Wayne County H. Scott and others' No. 1 Flanders, NW NW NE Section 3-2s-7e, McClosky lime at 3,228-43 ft., flowed an estimated 480 bbl., naturally.

In Edwards County Superior Oil Co.'s No. 3 Woods, SW NW NW Section 19-2s-11e, Walterburg sand at 2,368-70 ft., pumped 144 bbl.; not shot.

New Wildcat Operations

In Cumberland County Ginther made a location for No. 1 Kemper, SW NW SE Section 22-10n-10e.

In Clark County Harry Dunn and others' No. 1 Metzgar, C NE NE Section 7-9n-12w, deepening an old well from 842 ft., drilling at 1,020 ft.

In Effingham County E. E. Goad and others' No. 1 Henry, 158 ft. from north and 524 ft. from east lines of NE Section 319n-4e, Bethel sand at 1,698 ft., total depth 1,714 ft., small showing of oil, shut down for orders.

In Bond County National Petroleum Co.'s No. 1 Spindler Investment Co., a location for a Devonian lime test in C NW NW NW Section 10-6n-2w. Seaboard Oil Co.'s No. 1 O. Tremblay, SE SE SE Section 22-5n-3w, location for Devonian lime test. C. Barkley, NW NE NE Section, moving in machine.

In Madison County R. Jones and Barnes' No. 1 Early, NW NW NE Section 30-6n-5w, rigging up core drill; a Devonian lime test. B. G. & M. Drilling Co.'s No. 1 Isenberg, 50 ft. from south and 175 ft. from east lines of NE NW Section 21-5n-6w, spudded; a Devonian lime test.

In Crawford County Bell Brothers' No. 1 Wampler, C E½ SE SW Section 1-5n-12w, drilling at 960 ft.

In Fayette County Sol Simon's No. 1, SW SE SW Section 19-5n-3e, location.

In Clinton County Matches' No. 1 Nettermyer, NE SE NW Section 12-1n-5w, moving in tools for a Devonian test.

In Edwards County S. D. Ford's No. 1 Marshall, SW SE SE Section 2-1n-10e, spudded and shut down.

In Hamilton County Kingwood Oil Co.'s No. 1 Morris, 330 ft. from south and 160 from west lines of SE NE Section 34-5s-6e, location.

Wildcat Progress

In Iroquois County Whitlow's No. 1 Gannon, NE SW SE Section 5-27n-12w, drilling at 940 ft.

In Tazewell County House's No. 1 Greening, NW NW SE Section 28-24n-2w, fishing at 1,235 ft.

In Edgar County Pearcey's No. 1 Sholem, NW SE SE Section 13-14n-14w, drilling at 400 ft. Dunn's No. 1 Weaver, SW NE NW Section 24-14n-14w, drilling at 245 ft.

In Shelby County Walker's No. 1 Odell, C E½ SE NW Section 20-14n-2e, drilling below 2,150 ft. Johnson Drilling Co.'s No. 1 Schaffer, CWL NW NE Section 27-10n-5e, drilling at 1,964 ft. Aux Vases sand topped at 1,951 ft. It had water in upper sands.

In Clark County Hull's No. 1 Briscoe, CWL SW Section 32-12n-14w, total depth 512 ft., plugged back to 438 ft., and testing on the pump.

In Coles County Carter Oil Co. was testing shallow horizons in No. 1-A Seaman, SE NE SW Section 35-12n-7e, Cypress sand was topped at 1,777 ft. and Bethel at 1,925 ft., coring below 1,989 ft.

In Clark County Snavely's No. 1 Schoolfield, SE NE SE Section 6-11n-11w, shut down for orders at 2,307 ft. Allen & Sherritt's No. 1 Biggs, NW NW SW Section 9-11n-14w, total depth 2,450 ft.; putting on the pump.

(Continued on Page 90)

INDIANA

EVANSVILLE, Ind., May 27.—A flock of dry holes, and no oil or gas wells were completed in Indiana in the past week in review, which, following the list of failures of the previous week, cuts down the wildcatting in the state very materially.

Spencer County

In Spencer County Blosser and others' No. 1 Harvey, NW SW NW Section 4-8s-6w, spudded. Damron Brothers' No. 1 Beckert, C NE SW Section 29-7s-6w, set 9⅛-in. casing at 915 ft. Kentucky Natural Gas Co.'s No. 1 Wirthwein, C W½ SW SE Section 29-7s-6w, spudded. Williams and others' No. 1 Walker, NE NE NW Section 6-8s-6w, drilling at 255 ft. Kentucky Natural Gas Co.'s No. 1 Yeager, C NW NE Section 31-7s-6w, corrected location, rigging up machine. Mecca Oil Co.'s No. 1 Seay, NW NW SW Section 32-7s-6w, drilling at 150 ft.

Sturbois and others' No. 3 Boyd, SE NE NE Section 31-7s-6w, hole full of water at 909-25 ft. and 1,125 ft., total depth, abandoned. Troy Refining Co.'s No. 1 Mackey, NE SW SE Section 31-7s-6w, sand at 892 ft., hole full of water at 902-04 ft., abandoned. Appell and others' No. 1 Thomas, NW SE NE Section 12-7s-8w, top of Chester series at 959 ft., total depth 1,065 ft., water sand at 1,050-65 ft., abandoned.

Hedges and others' No. 1 Eble, SW NW NW Section 7-7s-7w, running 8-in. casing, total depth 455 ft. Lambert and others' No. 1 Hodges, NW NW NE Section 5-7s-7w, spudded.

Ray Johnson and others' No. 1 Powell, NW NW SW Section 28-6s-7w, a location. Rogers and others' No. 1 Miller, SE cor. SW Section 32-6s-7w, shut down for orders at 1,060 ft. Damron Brothers' No. 1 Carder, NE NE NW Section 31-5s-5w, shut down at 780 ft.

Gibson County

In Gibson County J. E. Amis, Jr., made a location for No. 9 Cooper, SW cor. NE NE Section 24-3s-14w, a twin. Anderson and others' No. 1 Boeglin, C E½ SE NW Section 10-4s-10w, rigging up machine. S. M. Kernan's No. 1 Brown, C E½ NW SE Section 12-3s-9w, total depth 1,175 ft., fishing for tools. A. J. Walker's No. 1 Schmidt, NW NE NW Section 24-3s-9w, drilling at 1,350 ft. Obermyers and others' No. 1 Kleiderer, SE SE SE Section 28-3s-14w, total depth 2,795 ft., an oil well shut in, awaiting storage and pipe-line connection. Papoose Oil Co.'s No. 3 Cooper-C, SE cor. NW SW Section 18-3s-13w, shot with 50 qt. at 2,786-2,803 ft., total depth 2,917 ft., swabbed 15 bbl. of oil and 5 bbl. of water in 24 hours; preparing to acidize. L. B. Jackson and others' No. 1 Barthold, NW NW SW Section 23-2s-9w, drilling at 620 ft. L. B. Jackson's No. 1 Bauer, SW SE SE Section 10-2s-9w, drilling at 990 ft. A. E. Braden and others' No. 1 Knight, NW SW SW Section 2-2s-11w, drilling at 1,504 ft. W. C. McBride, Inc.'s No. 1 Blair, SE SE NW Section 13-2s-12w, spudded and shut down. J. W. Chamberlain and others' No. 1 Shawhan, Donation 121 1s-10w, shut down at 1,644 ft. K. T. & F. Development Co.'s No. 1 Shoultz, NE NE SE Section 18-1s-9w, shut down at 1,262 ft.

Posey County

In Posey County Harry Sandler and others' No. 1 Keck, NE SW NW Section 34-3s-14w, was drilling at 2,105 ft.

O. F. Kelley and others' No. 2 Hahn, NE NW SW Section 1-7s-12w, Menard sand at 1,703 ft., total depth

(Continued on Page 75)

EASTERN KENTUCKY

ASHLAND, Ky., May 27.—Drilling operations remained on the same general level in eastern Kentucky this week. No completions were reported and few new locations were listed.

In Knott County the Inland Gas Corp. was drilling at 262 ft., in slate, in No. 213 W. R. Smith and others, on Right Fork of Troublesome Creek, and made location for No. 215 Lindsey Amburgy, on Mill Creek of Left Fork of Troublesome Creek.

Kentucky-West Virginia Gas Co. is down 2,112 ft., in Big lime, in No. 584 Jeffie Hall, on Isaac Fork of Right Beaver.

In Martin County Kentucky-West Virginia Gas Co. was drilling at 1,485 ft., in Black lime, in No. 5265 J. G. Carlisle, on Cassady Branch of Coldwater Fork,

(Continued on Page 87)

OHIO FIELDS

WOOSTER, Ohio, May 27.—Six gas wells, three oil wells and six dry holes were completed in the Ohio fields covered in this report. Lorain County yielded an oil well with an initial production of 15 bbl. of oil after shot at 250 ft. Columbia Carbon Co. has staked a deep test slated to go to the Oriskany horizon, in Palmer Township, Washington County. It will be drilled in SE NE Section 32, on the Jesse C. Stollar tract.

In Athens County, Cannan Township, Wallace and others' No. 1 Elizabeth V. Hill, Section 13, is a gas well gaging 150,000 cu. ft., open flow from first Berea

(Continued on Page 91)

West, Central and Panhandle Texas

By D. H. STORMONT

Three Western Counties May Figure in Field Discoveries

MIDLAND, Tex., May 27.—Three widely separated areas held the attention in West Texas at the close of the week as possibilities of bringing in new oil production appeared favorable at each one. The three spots are in Crane, Tom Green and Andrews counties.

Other districts remained about normal, with field work continuing to show slight declines in several areas. The Wasson field of Yoakum and Gaines counties, which 2 months ago had as many as 75 drilling wells, 30 locations, and a weekly completion average of from 18 to 22 wells, has dropped off to 48 drilling wells, 15 locations and 7 completions as of the past week. The decline is believed to have been caused mainly by pipe-line proration in the big field. Ector County and the district's other most active spots continue about normal as compared with 2 months ago.

Assuring a new producing area for Crane County approximately midway between the Dunes and Waddell fields of the eastern part of the county, Gulf Oil Corp.'s No. 31 Waddell, Section 5, Block 24-B, P.S.L. Survey, was last reported drilling ahead below 3,358 ft., with 400 ft. of oil in the hole. First oil showing was logged from 3,243 to 3,254 ft., with an increase found from 3,312 to 3,320 ft. amounting to 27 gal. hourly on test. The second increase was found from 3,321 to 3,328 ft. which amounted to 133 gal. hourly on a bailing test. This is slightly more than 3 bbl. hourly for the 7-hour testing period. The showings are about 150 ft. higher than the productive zone in the Waddell field. Gulf is drilling the test with company tools and there is no contract depth. It is being carried deeper in search of a more prolific zone, after which all horizons will be tested.

Tom Green County

First commercial-oil production for Tom Green County was indicated last week at B. C. Mann's No. 1 Funk, about 25 miles northwest of San Angelo, and in the northwest corner of the county. On pumping tests several days ago the well made about 1 bbl. of oil hourly. The pay horizon is in the Blaine lime from 1,123 to 1,127 ft. and from 1,150 to 1,155 ft. It was given an acid treatment of 1,000 gal. and a decided increase was noted in the output. The well flowed 14 bbl. of oil, including an 8-bbl. load, in 15 minutes when opened late in the week. The well then was given several short pumping tests after which it gaged 64½ bbl. of 33-gravity oil in 10½ hours to fill the storage tank at the well. The installation of a new pumping unit and an additional 100-bbl. storage tank is planned before further testing. The exact location of the well is 330 ft. from the north and 1,650 ft. from the east lines of Section 32, Block 5, H.&T.C. Survey, 13 miles southwest of Water Valley.

Andrews County

The possibility of a commercial oil producer was still seen at Andrews County's most closely watched wildcat. It is Atlantic Refining Co. and Helmerich & Payne, Inc.'s No. 1 University, in the southwestern part of the county and located in the NE NE Section 11, Block 11, University Lands Survey. It was last reported drilling below 4,300 ft., in lime. The test swabbed about 400 ft. of oil each day during the past week. Casing is set at 4,238 ft. and the drilling is with cable tools.

Ector County Extensions

Centering no little attention during the week was the rapidly expanding Johnson-Foster-Addis area in the southeastern part of Ector County. Drilling development during the early months of this year definitely linked the North Cowden field with the Foster field to the south. Development during the past few weeks has linked the Addis area, about 2 miles southwest of the Foster field, with the Foster area. This makes a continuous oil field down the eastern side of Ector County, the dimensions of which approximate 20 miles in length and 4 miles in width, an approximate total of 80 sq. miles or nearly 50,000 acres of possibly productive territory.

New activity for the south end of the Foster field was seen in the past week as three deals were reported. The first is the staking of a new wildcat by Forest Development Corp. south of the Foster field and east of the Addis area. It will be No. 1 Will P. Edwards, 467 ft. from the north and east lines of Section 19, Block 43, Township 3s, T.&P. Survey. The location is a mile west of the Sun Oil Co.'s No. 1 Edwards in the NE cor. Section 20 which was completed as a dry hole at 4,189 ft. in November 1935.

Kewanee Oil & Gas Co. has obtained from Paul Moss the N½ of Section 6, Block 42, Township 2s, T.&P. Survey, for an unreported consideration. The acreage is 2 miles southwest of the Forest Development Corp.'s recent extension producer.

Cities Service Oil Co. has acquired two tracts from Paul Moss which lie about 2 miles southwest of the Forest Development's new producer. Drilling is expected to be started on both tracts in the near future.

Crockett's Noelke Area

Moore Exploration Co. and Olson Drilling Co.'s No. 1 W. T. Noelke, west Crockett County's newest field discovery, reported a gage as the week closed. The well was treated with 500 gal. of acid at 2,338-44 ft. and was swabbed dry and then swabbed at the rate of 1 gal. of oil per hour. Commercial production was assured from an upper horizon last week when it showed for 200 bbl. daily from a section from 2,150 to 2,233 ft. The well is bottomed at 2,360 ft. and operators are expected to plug back to 2,355 ft. for testing of the first encountered show. The well is in Section 10, Block GG, H.E.&W.T. Survey, about 6 miles southeast of the Soma Oil & Gas Syndicate's discovery well.

Crockett's Deep Strawn Area

Indicating steady development for the Todd area in Crockett County, Continental Oil Co. has staked location for No. 4 Todd Unit, a south offset to No. 2 Todd, completed from the crinoidal lime for 840 bbl. daily. No. 4 is 660 ft. from the south and 2,010 ft. from the west lines of Section 29, Block WX, G.C.& S.F. Survey. No. 4 is a southwest offset to No. 3 Todd which flowed 662 bbl. of oil in 7 hours for a larger flow than the discovery well.

WEST TEXAS FIELD COMPLETIONS

(24-hour gages)

Crane County

In the Jordan-Pennwell field Atlantic Refining Co.'s No. 6-A University, 3,500-59 ft., 1,280 bbl. Atlantic Refining Co.'s No. 7-A University, 3,545-70 ft., 1,900 bbl. Kewanee Oil Co.'s No. 6-BX University, 3,477-3,575 ft., 1,439 bbl. Sinclair Prairie Oil Co.'s No. 6-24 University, 3,497-3,574 ft., 472 bbl.

In the McElroy field Gulf Oil Corp.'s No. 216 McElroy, 2,753-2,983 ft., 1,017 bbl.

In the McCamey field Texas Consolidated Oil Co.'s No. 10 Hughes, 2,063-2,110 ft., 119 bbl.

Ector County

In the Foster field Atlantic Refining Co.'s No. 10 Henderson, 4,030-4,230 ft., 1,027 bbl. Stanolind Oil & Gas Co.'s No. 39-A E. F. Cowden, 3,980-4,140 ft., 453 bbl. Stanolind Oil & Gas Co.'s No. 47-A E. F. Cowden, 3,970-4,156 ft., 271 bbl.

In the Johnson field J. D. Bodkins' No. 2-J Johnson, 4,050-4,160 ft., 537 bbl. Everats Drilling Co.'s No. 1 J. L. Johnson, dry and abandoned at total depth of 4,430 ft. Indian Territory Illuminating Oil Co.'s No. 1-E Johnson 4,,032-4,178 ft., 175 bbl. Sunray Oil Co.'s No. 2-D Johnson, 4,038-4,149 ft., 658 bbl. In the Goldsmith field Phillips-Pure's No. 86 C. Cowden, 4,113-65 ft., 3,478 bbl. Phillips-Pure's No. 87 C. Cowden, 4,098-4,152 ft., 6,566 bbl. Shasta Oil Co.'s No. 4 Scharbauer, 4,163-4,206 ft., 511 bbl. In the Jordan field, Snowden & McSweeney's No. 3 University, 3,531-3,625 ft., 377 bbl. Texas Co.'s No. 25 Connell, 3,360-3,660 ft., 1,688 bbl.

Gaines County

In the Seminole field Magnolia Petroleum Co.'s No. 4-195 H. & J., 5,115-5,233 ft., 681 bbl. Ohio Oil Co.'s No. 3 Averitt, 4,135-5,260 ft., 508 bbl. Osage Drilling Co.'s No. 9-A Tippett, 5,130-5,349 ft., 795 bbl. Osage Drilling Co.'s No. 11-A Tippett, abandoned location. Osage Drilling Co.'s No. 12-A Tippett, abandoned location.

Hockley County

In the Slaughter field Texas Co.'s No. 1-E Mallett Land & Cattle Co., 5,000-25 ft., 243 bbl. A wildcat, Denver Production & Refining Co. and Helmerich & Payne, Inc.'s No. 1 Whiteface farms, top anhydrite 2,030 ft., top brown lime 3,400 ft., top solid lime 3,710 ft., dry and abandoned at total depth of 4,790 ft.

Pecos County

In the Tobarg field Cardinal Oil Co.'s No. 57-E Tippett, 476-79 ft., 27 bbl. A. J. Rife's No. 14 Tippett, 437-75 ft., 33 bbl. In the Yates field Ohio Oil Co.'s No. 14 Smith, 1,620-1,842 ft., 2,252 bbl.

Scurry County

In the Sharon field Coffield & Guthrie's No. 3 First National Bank, 2,373-2,437 ft., 108 bbl. F. W. Merrick, Inc.'s No. 3 First National Bank, 2,250-2,502 ft., 40 bbl.

Terry County

In the Slaughter field George P. Livermore's No. 1 M. E. Jacobson, 4,992-5,035 ft., 828 bbl.

Ward County

In the Estes field Gulf Oil Corp.'s No. 128 O'Brien, 2,694-2,778 ft., 422 bbl. Gulf Oil Corp.'s No. 132 O'Brien, 2,512-31 ft., 213 bbl. Acme Oil & Royalty Co.'s No. 1 Shell-Sloan, 2,935-3,037 ft., 220 bbl.

Yoakum County

In the Wasson field Aloco Oil Co.'s No. 7 Smart, 4,880-5,146 ft., 684 bbl. Aloco Oil Co.'s No. 4 White, 5,048-5,245 ft., 616 bbl. Honolulu Oil Corp.'s No. 5-825 Kendrick, 4,975-5,145 ft., 1,451 bbl. Carl B. King's No. 1 E. C. Brand, 4,900-5,048 ft., 657 bbl. Mabee Oil & Gas Co.'s No. 2-B Willard, 4,900-5,175 ft., 683 bbl. Magnolia Petroleum Co.'s No. 15 Mahoney, 4,940-5,180 fo., 1,071 bbl. Shell Oil Co., Inc.'s No. 10-D Baumgart, 4,880-5,176 ft., 1,133 bbl.

WEST CENTRAL TEXAS

FORT WORTH, Tex., May 27.—Development which amounted to seven new locations for Jones County's two recently opened oil fields, led the activity of the week in West Central Texas.

The two areas are Farrell and Triplett, the former in the northeastern and the latter in the southwestern part of the county. North of Anson, and adjacent to John E. Farrell's No. 1 Reid, discovery well, which made 150 bbl. daily from the Gunsight lime, Farrell has staked two locations while Knowles has located one. Farrell staked No. 1 J. W. Reid, 330 ft. from

(Continued on Page 80)

North and East Texas

Montague County's Chances Improved by Good Showings

By
D. H. STORMONT

WICHITA FALLS, Tex., May 27.—The first definitely encouraging reports since the completion of Montague County's two field openers some 4 weeks ago were seen during the week past when outpost tests to both the Omohundro area and the Sinclair Prairie area found saturation and prepared to complete. General exploration continued in the entire area. Locations for deep wildcats were made in both Montague and Clay counties. Prospects of Ordovician oil production in the Wilbarger extension of the K.M.A. field were indicated.

Holding top attention for the week was Montague County's two closely watched areas, one just south of Ringgold and the other just west of Bonita. A half mile north of W. B. Omohundro's discovery south of Ringgold, British American Oil Production Co.'s No. 1 Martin, Section 27, Block 4, H.&T.C. Survey, cemented 7-in. casing at 5,680 ft. after drilling saturation in the same Bend Arkosic sand of the discovery well. Total depth is 5,695 ft. and saturation was drilled from 5,681 to 5,695 ft. The well, which has been drilled as a "tight" operation, was revealed to have checked about flat with the discovery well.

As a northeast outpost to the Bonita, or Sinclair Prairie, field in the eastern part of Montague County, Magnolia Petroleum Co.'s No. 1 Gilbert, Bryant Survey, ½ mile northeast of Sinclair Prairie's 5,200-ft. discovery well, logged saturated conglomerate at 5,426-34 ft. A drill-stem test was run on the section and in 10 minutes the well began to flow oil. It was allowed to flow for only 1 minute, then the tool was closed. When the kelly was broken off the well made another flow for 10 minutes. Casing is being run for completion. This sheds a new light on the area which received severe setbacks when Sinclair Prairie Oil Co.'s Nos. 1 Doty and 2 Howard, the second and third operations in the area, both missed the discovery pay and were also dry in the deeper Ellenburger lime.

Indicating that production is definitely associated with stratigraphic traps and local structures, the production in No. 1 Gilbert is 200 ft. below the pay horizon in the discovery well. Neither No. 1 Doty nor No. 2 Howard have yet been plugged and the operating company has indicated that attempts will be made to complete them in the 5,400-ft. horizon.

Wildcat Status

A new 8,000-ft. wildcat test has been located in Montague County while a 6,000-ft. test has been staked in southeastern Clay County. The former is W. H. Peckham's No. 1 Lawson, proposed 8,000-ft. wildcat, 1,213 ft. from the north and the south lines and 1,000 ft. from the west line of a 287-acre tract in the N. Kimbro Survey, Abstract 405, 9 miles southeast of Ringgold. The location is approximately 5 miles southeast of the Omohundro strike south of Ringgold.

The block was taken several weeks ago with a drilling obligation, but definite location was not at that time announced. If the contract is carried out it will be one of the deepest holes drilled in the district..

In the southeastern part of Clay County and contracted to 6,000 ft., E. C. Norwood and associates have moved in materials and constructed derrick for No. 1 K. N. Hapgood, 660 ft. from the south and 330 ft. from the west lines of Block 61, Marion County School Lands Survey, Abstract 308, about 8 miles southwest of Ringgold, Montague County, and about 4 miles northwest of the Gant production at 3,800 ft. on the Worsham ranch in eastern Clay County.

K.M.A. Area

Commercial oil production from the Ellenburger lime in Wilbarger County's west extension to the K.M.A. field was indicated as the week closed when Consolidated Oil Co.'s No. 1-K Barnes, in the center of the Consolidated area, found oil in the Ellenburger from 4,336 to 4,355 ft. A drill-stem test revealed only mud, but it was found that the tool had not been on the bottom of the hole. Another test was started as the week closed, the results of which will be known this week. Location is 1,957 ft. from the south and 2,303 ft. from the west lines of Section 11, Block 7, H.&T.C. Survey.

The recently issued Texas proration schedule for the summer months included a decided cut in allowable of the large K.M.A. field. The new formula will reduce the field allowable about 10,000 bbl. daily. The allowable of wells will be determined 50 per cent on acreage, 20 per cent on per well, and 30 per cent on bottom-hole pressure of the individual well. The top well allowable will be 36 bbl. daily.

Lower Fort Worth Basin Area

Trading continued during the past week in the lower part of the Fort Worth basin area. Denton County received indications of a new deep well, two wells were drilling and another was projected in Parker County and leasing continued active in Tarrant County.

First attempt for deep production in Denton County was scheduled by Fred Freeman and associates when they acquired the old Krum block and a temporarily abandoned well which they intend to drill deeper. The location of the well, which is bottomed at 3,507 ft., is in the M.E.P.&P. Survey, Abstract 1470, about 5 miles west of Denton. Starting date for the work was not announced.

In Parker County W. M. Holland and C. Leidecker's No. 1 G. W. Keeling was last reported drilling below 600 ft. The test was originally staked by E. R. Marchman and contracted to 4,500 ft. Since it was taken over by the new operators the contract depth was changed from 4,500 to 2,400 ft., but the original contract depth may be carried out should no commercial production be found higher. The location is 467 ft. from the south and east lines of the F. Liddy Survey, Abstract 829.

The test which has been drilling for the past 2 years in the southwest corner of Parker County has cemented casing at 3,905 ft. and is drilling ahead below 4,075 ft. It is Cowan's No. 1 Gilbert, sometimes known as Brown & Gardner's No. 1 Gilbert, located in the T.&P. Survey, Abstract 1958. A reported new wildcat in the county is C. F. Carter's No. 1 Dr. E. F. Yager, 330 ft. from the east and 1,000 ft. from the north lines of a 263-acre tract in the Reynolds & Williams Survey. The drilling permit is reported to have been obtained, but the starting date was not given.

In Tarrant County Magnolia Petroleum Co. is reported to have leased 3,725 acres out of the C. B. Teams estate, while Texas Pacific Coal & Oil Co. is reported to have leased parts of the Watuaga, Smithfield, and Hurst areas. The Republic Natural Gas Co. is reported to have taken 3,300 acres of the large Marion Sansom ranch just northwest of Fort Worth. The majority of the tracts were acquired for prices ranging from 40 cents to 65 cents per acre.

EASTERN TEXAS

DALLAS, Tex., May 27.—Definite results from several closely watched areas throughout eastern Texas added to a busy week in the district. Gregg County's Willow Springs area received its third oil well as gage was reported for Lacy's No. 1 Lacy. A drilling permit was issued for a recently staked wildcat in the Moss area in Camp County, and new wildcats were staked in three areas in East Central Texas.

Based on a 4-hour gage Roger Lacy's No. 1 fee, Ford Survey, third deep Glen Rose gas and distillate producer in the Willow Springs area of Gregg County, gaged 80,000,000 cu. ft. of gas daily with a slight quantity of distillate. The well is located between and slightly east of Humble and Gulf's two producers in the field. The well showed a closed-in pressure of 3,200 lb. on the tubing and 3,000 lb. on the casing. It was opened for a 4-hour flow, the starting choke being ⅛ in. and the ending choke ¾ in. Pressures at the end of the test were 1,000 lb. on the tubing and 2,200 lb. on the casing. The well is bottomed at 7,308 ft. Casing is set at 7,252 ft.

In Camp County, and as a southeast offset to H. S. Moss's No. 1 Venters, indicated Pettit lime discovery well, M. V. Cadman of Tyler has obtained permit for his No. 1 Minnie Harper, on a 10.8-acre tract in the northwest part of the Robert Wyres Survey. The location is 200 ft. from the south and 180 ft. from the east lines of the tract. Two other locations have been staked in the immediate area, one on a 37-acre tract and the other on a 33-acre tract. Neither of these has reached the Railroad Commission for issuance of a permit.

Rusk County

Humble Oil & Refining Co. and Shell Oil Co., Inc., together with W. J. Werby of Longview, have started a 4,500-ft. wildcat test in southern Rusk County. It is No. 1 L. G. McMillain, 175-acre tract 2 miles south of the town of Clanfawn, on a block of between 2,500 and 3,000 acres. Derrick has been erected and spudding is scheduled for the early part of this week. The location falls in the W. F. Allison Survey, about 6 miles southeast of the town of New Salem.

Anderson County

In the extreme southwestern corner of Anderson County and south of the small Hemby gas and distillate producing field, a wildcat has been abandoned while another has been staked. The abandonment was R. H. Williamson and others' No. 1 O. G. Rogers, wildcat gas well which burned out of control for several weeks. It is in the Greenwood Survey. When the fire was brought under control, and the gas flow killed, the well gaged 55 bbl. of salt water and 35 bbl. of distillate per day. Production was from the Woodbine sand from 5,380 to 5,390 ft. The hole has been plugged and abandoned at a total depth of 5,407 ft.

Even though abandoned, the test indicated a small field in the general vicinity and upon this basis, M. E. Hart and T. E. Mayberry have located a wildcat ¾ mile southwest of the abandoned gasser. The new location is 1½ miles south of the Hemby area. The operators have signed contract with Wright Drilling Co. of Houston for a 6,000-ft. test on a 500-acre tract out of the R. W. and S. C. Box Surveys. The contract also calls for additional wells should commercial production be obtained in the first attempt.

Henderson County

New operation was started in the Mabank area of northwestern Henderson County as the week closed. It was R. L. Manning, Houston, and associates' No. 1 T. N. Bell, located 400 ft. from the north and east lines of a 40-acre tract in the D. Muckleroy Survey. It is southwest of Richard & Holloway, Inc.'s No. 2 Buaguss, in the J. Gardner Survey, in the Rowe and Baker field. Surface casing has been set.

EAST TEXAS FIELD COMPLETIONS

(1-hour gages)

Gregg County—Kilgore Area

American Liberty Oil Co.'s No. 34 Sabine River

(Continued on Page 79)

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PETROLEUM ELECTRIC POWER ASSOCIATION

California Field Report

By
L. P. STOCKMAN

Cantua District in Fresno County Presents a Prospect

LOS ANGELES, Calif., May 27.—The most important development in California from a drilling standpoint is the test being made by Texas Co. on No. 1 Southern Pacific, a wildcat in the Cantua district of Fresno County in Section 23-17-15. The well showed about 4,000,000 cu. ft. of gas on a formation test a week or so ago. Water trouble delayed the production test as the company was obliged to cement the well three times before securing a satisfactory water shut off. The hole was bottomed at 10,116 ft., but was plugged back to 9,360 ft.

Texas Co. swabbed in No. 1 Southern Pacific at 7:30 p.m., May 24, and it flowed mud, water and gas with a surging flow. Gas production was at rate of 2,000,000 cu. ft. daily. The well died at 3 p.m. but the casing pressure built up and the well began flowing water and gas again at 6 p.m. on the same day. Gas production was at a daily rate of 2,500,000 cu. ft., and water production was at daily rate of 200 bbl. This water tested 800 grains of salt per gallon. The well died again at 3 a.m., May 25, and the crew went back into the hole. Fluid level was found at 3,275 ft. and the company immediately began preparations to locate the source of the water and take steps necessary to remedy the situation.

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	May 19		May 12			
Intercoastal-domestic—	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Crude oil	.....	.....	.....	.....	144,217	247,520
Fuel oil	.....	.....	36,140	5,163	188,938	884,491
Diesel and gas oil	.....	.....	.....	.....	.....	163,501
Gasoline	.....	.....	231,991	33,142	1,132,395	1,138,961
Kerosene	.....	.....	.....	.....	.....	122,200
Foreign exports—						
Crude oil	312,420	44,631	234,791	33,542	5,043,120	5,585,849
Fuel oil	112,295	16,042	250,944	35,849	2,962,642	3,082,280
Diesel and gas oil	77,649	11,093	159,452	22,779	2,583,907	2,378,446
Gasoline	.....	.....	96,695	13,814	1,918,514	3,089,132
Kerosene	.....	.....	34,780	4,969	402,960	621,586
Lubricants	.....	.....	.....	.....	77,798	42,034
Coastwise-domestic—						
Crude oil	79,684	11,383	290,720	41,531	3,782,351	4,782,222
Fuel oil	209,196	29,885	278,141	39,734	5,852,762	3,653,355
Diesel and gas oil	26,338	3,763	50,936	7,277	1,158,928	1,030,245
Gasoline	508,816	72,688	359,775	51,396	6,353,197	5,541,256
Kerosene	6,997	1,000	20,384	2,912	214,936	168,011

Honolulu Oil Corp. has started a projected deep test on the Buena Vista Hills anticline in the Midway-Sunset field of Kern County, California, in an area that is generally regarded as having considerable merit. A unit plan of development was formulated for this area a few years ago

Current production of leading California fields follows:

	Barrels
Wilmington	51,950
Kettleman Hills	49,550
Long Beach	43,700
Midway-Sunset	47,350
Ventura Avenue	35,100
Coalinga	29,750
Santa Fe Springs	26,500
Huntington Beach	25,550
Montebello	22,250
Santa Maria Valley	16,850

Wilmington

The Wilmington field of Los Angeles Basin which has produced over 90,000,000 bbl. of crude oil since discovery and which has a rated potential daily production of 606,775 bbl. yielded three new wells in the past week. Total production for the month of May should be approximately 2,500,000 bbl. for the field.

The Wilmington field presents an unusually eerie sight on a dark night due to its illumination. Because of the proximity of the United States battleship anchorage and location of aviation bases and fields, operators in the Wilmington field are obliged to install a relatively large red electrically lighted globe on the top of each derrick. On a dark night it is possible to see 817 red lights extending over an area of more than 2 miles. The derricks are invisible and the red lights appear to be suspended in the air. In most fields, operators install a white globe on the walking beam but at Wilmington most of the wells are flowing and very few beams are in operation.

Union Pacific Railroad Co. topped the completion list with two new wells, one of which was good for 3,550 bbl. of 28.3-gravity oil per day from the Terminal zone. This new well was No. 141 fee which was carried down to 4,122 ft. but plugged back to 3,837 ft. The hole was finished with a combination 6⅝-in. and 8⅝-in. liner and the perforations at 3,162-3,289 ft., 3,309-68 ft., 3,383-3,473 ft., 3,483-3,544 ft., 3,683-3,747 ft. and at 3,767-3,831 ft. indicate the well is producing from both the upper and lower Terminal zone. No. 139 fee, a second completion of Union Pacific, was finished flowing 264 bbl. of 29.2-gravity oil daily from the Ford zone at 5,420 ft. It is in the west end of the Ford block in an area where the Ford zone has not been found prolific.

All wells in the Wilmington field are supposed to be restricted to one well to each acre and there have been some weird stretching of boundaries to secure enough property to make a full acre. It is permissible to measure from the center line of any street and the acreage may be in any shape as long as it is contiguous.

Continental Corp. has assigned itself an aggressive development program for the Wilmington field. This

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

	May 19		May 12			
	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Intercoastal-domestic—						
Fuel oil	.....	.....	.....	.....	67,840	61,281
Diesel and gas oil	.....	.....	.....	.....	281,260	69,550
Asphalt	.....	.....	.....	.....	174,268	280,447
Lubricants	.....	.....	.....	.....	11,151	11,184
Foreign exports—						
Crude oil	.....	.....	94,457	13,494	1,487,534	2,228,729
Fuel oil	.....	.....	78,706	11,244	655,609	1,107,333
Diesel and gas oil	.....	.....	142,872	20,410	1,108,457	888,274
Gasoline	.....	.....	58,780	8,397	1,025,438	1,296,429
Kerosene	.....	.....	7,008	1,001	202,539	305,252
Asphalt	.....	.....	.....	.....	.....	6,919
Lubricants	.....	.....	849	121	154,540	186,646
Other finished oil	.....	.....	.....	.....	506	352
Coastwise-domestic—						
Fuel oil	101,826	14,547	162,080	23,154	2,325,788	2,240,972
Diesel and gas oil	18,212	2,602	33,255	4,751	458,721	382,847
Gasoline	130,118	18,588	156,508	22,358	2,631,337	2,626,432
Kerosene	19,246	2,749	4,391	627	235,333	250,794

company which is developing the Los Angeles County flood-control channel in the extreme eastern end of the Wilmington field filed notices with the Division of Oil and Gas for permits to drill an additional 16 wells. These 16 wells with 16 previously filed will give the company 32 locations for work. The property being developed consists of a long narrow strip on the west bank of the flood-control channel but the wells are bottomed beneath the channel itself by directional drilling. The property stretching along the west bank of the channel affords enough room for the drilling equipment.

Continental Corp. completed No. 5 L.A.C.F.C. flowing 590 bbl. of clean 17.4-gravity oil daily from the Ranger zone at 3,044 ft. This new well is producing from 396 ft. of formation as the shoe of the 8⅝-in. water shut off has been cemented at 2,648 ft.

The Los Angeles Harbor Commission, despite a vote of the people to deed Reaves field in Los Angeles Harbor district to the U. S. Navy for an aviation field, has leased the westerly 60 acres of the field to Bell View Oil Co. for a period of 10 years. The lease covers property 150 ft. west of the field and extends 700 ft. from north to south and 2,000 ft. from east to west. The Bell View in compliance with the lease is allowed to produce the area south of this lease but must do so by directional drilling. The first well must be started 90 days after signing of the lease and the company must post a bond of $5,000 and drill to a depth of 6,000 ft. unless production is developed higher in the hole. The Harbor Department will receive a royalty of 25 per cent of oil, gas and other hydrocarbons produced. The lease is located on Terminal Island and if production is secured on the exisiting structure it will probably be limited to the Ranger zone which is the upper zone just below the tar zone.

Dominguez

Union Oil Co. completed its first well on the Austin or Gardena Syndicate parcel adjoining R. E. Havenstrite's Larronde lease in the extreme western end of the Dominguez field of Los Angeles Basin when No. 1 Austin was brought in flowing 1,035 bbl. of clean 32.5-gravity oil and 1,450,000 cu. ft. of gas per day from the eighth Callender zone with bottom of the hole at 7,480 ft. The shoe of the 7-in. water string is cemented at 6,970 ft. but not all of this interval is produced. R. E. Havenstrite is drilling out No. 3 Larronde, which has been cemented with a 7-in. string at 7,015 ft. and should be ready for an early production test. It is bottomed in the pay at 7,452 ft. South of the Larronde property, Seaport Oil Corp. cemented No. 1 Dastell at 7,945 ft. and will attempt to produce the eighth Callender zone. The log of this well indicates that the structure is dipping quite rapidly to the south.

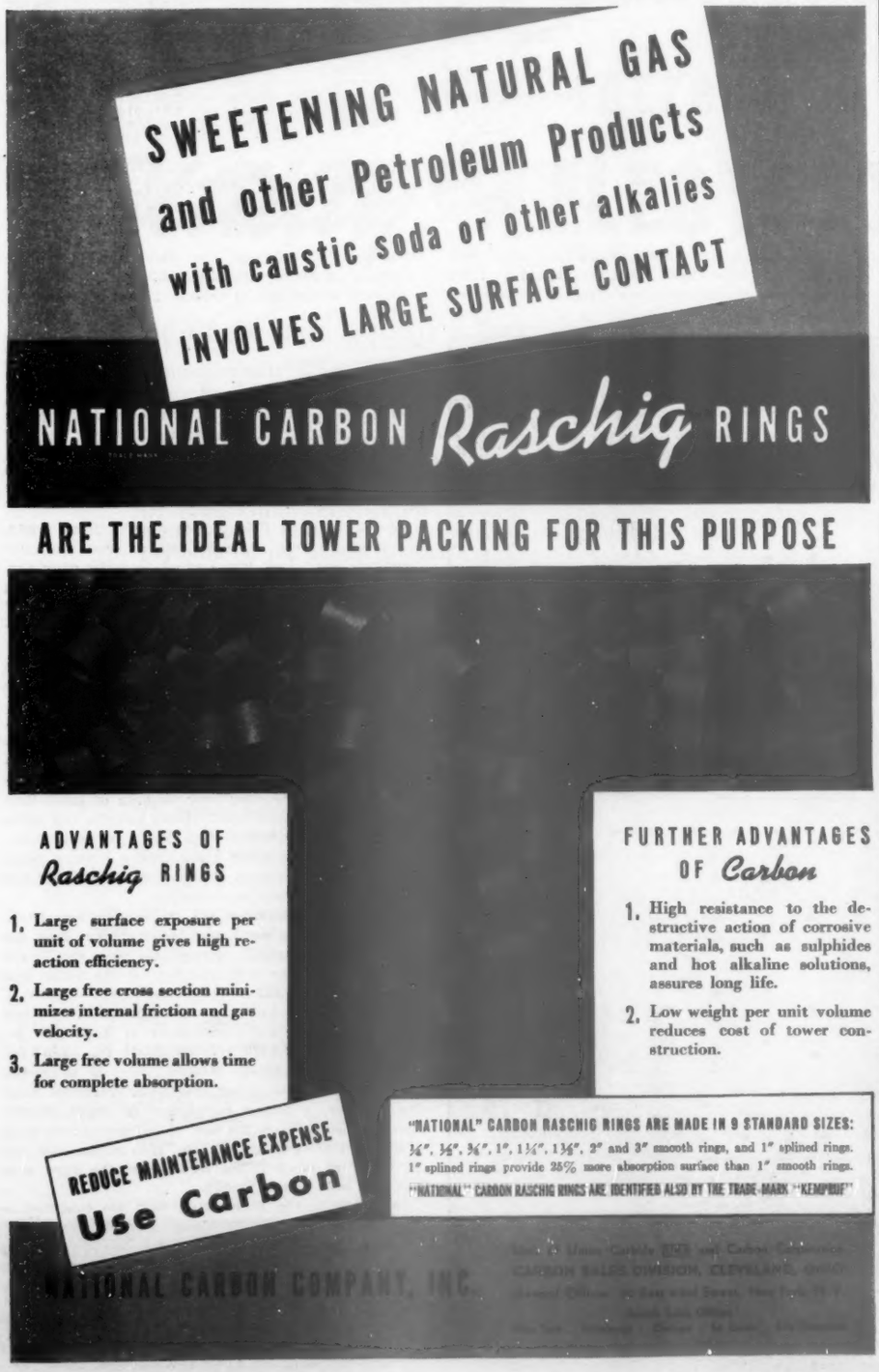
Rosecrans

The Rosecrans field, northwest of the Dominguez field, and one interval removed from the latter field along the Newport-Beverly fault zone, yielded two small wells during the week. In the south end, Southern California Petroleum Corp. completed No. 2 Slabaugh, flowing 234 bbl. of 30.9-gravity oil cutting 3 per cent and 186,000 cu. ft. of gas daily from the O'Dea zone with bottom of the hole at 7,585 ft. The 7-in. water string was cemented in this well at 7,123 ft. so that the well is producing from 419 ft. of formation. No. 40 Rosecrans of Union Oil Co. in the area north of the southern extension has been completed flowing 75 bbl. of 32.3-gravity oil cutting 50 per cent along with 576,000 cu. ft. of gas from 8,118 ft. Operators interested in the Rosecrans field are at present watching No. 1 Founders of Chicago Oil Co. because from 7,000 ft. to 7,200 ft. the hole is correlating higher than any other well in the South Rosecrans field. Considerable faulting has been noted in the Rosecrans field, hence subsurface formations have shown a considerable variation.

San Joaquin Basin

Shell Oil Co., Inc., completed another excellent well in the Ten Section field of Kern County this week and has scheduled No. 38-20-A Kern County Land in Section 20-30-26 for completion next week as the water has been cemented above the pay. Shell's new producer is No. 41-31-B Kern County Land in Section 31-30-26. It was finished flowing 2,960 bbl. of 33.1-gravity oil and 2,190,000 cu. ft. of gas daily from the Stevens sand with bottom of the hole at 8,220 ft. The well is in the southwest end of the Ten Section field and the pressures on tubing and casing indicate that it will stand up and is capable of exceeding its allowable on steady production.

In the Kettleman North Dome field, Kenda completed No. 38-26-Q in Section 26-22-18 flowing 457 bbl. of very clean 35.4-gravity oil and 897,000 cu. ft. of gas daily from the Temblor with effective depth at 7,724 ft. It topped the Brown shale at 5,230 ft.; logged top of the Temblor at 6,535 ft., and found the lower portions of the Temblor wet. The hole was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2. Large free cross section minimizes internal friction and gas velocity.
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FURTHER ADVANTAGES OF Carbon
1. High resistance to the destructive action of corrosive materials, such as sulphides and hot alkaline solutions, assures long life.
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"NATIONAL" CARBON RASCHIG RINGS ARE MADE IN 9 STANDARD SIZES:
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plugged back from 8,368 ft. to the completion depth.

In the Kern River field of Kern County Dick & Dore completed No. 31 and Helm & Smith completed No. 22 both in Section 34-28-28. The initial daily production of each was 5 bbl. per day of 13.2-gravity oil. Well No. 31 was finished at 668 ft. and No. 22 was completed at 650 ft.

Los Angeles Basin

Barnsdall Oil Co. completed a well in the Newhall-Potrero field of Los Angeles County flowing 251 bbl. of 31.1-gravity oil and 185,000 cu. ft. of gas per day from 7,240 ft. This new well is producing from 170 ft. of formation and since the flow bean was restricted to 10/64-in. the initial does not represent the well's maximum capacity.

Southwest Exploration Co. completed a tideland well in the Huntington Beach field of Orange County, No. 27 State, brought in pumping 763 bbl. of very clean 27.1-gravity oil and 200,000 cu. ft. of gas per day from 5,070 ft.

In the West Coyote field Standard Oil Co. completed No. 69 Emery in Section 24-3-11 flowing 580 bbl. of 27.2-gravity oil cutting 7 per cent and 880,000 cu. ft. of gas per day from 5,780 ft.

Coastal District

Shell Oil Co. completed No. 118 Taylor in the Ventura Avenue field at an effective depth of 7,653 ft. from which point the well was brought in flowing 3,656 bbl. of 31.1-gravity oil cutting 2 per cent and 2,866,000 cu. ft. of gas daily. It was carried to 7,700 ft. but was plugged back before completion. The well is in the south central part of the Taylor lease. In the Shiells Canyon field of Ventura County, Texas Co. completed No. 139 Shiells pumping 60 bbl. of 30.1-gravity oil cutting 5 per cent daily from an effective depth of 2,612 ft. This new well was carried down to 2,710 ft. but was plugged back because of bottom water.

In the Betteravia district of Santa Barbara County Union Oil Co. abandoned No. 1 Pezzoni in Section 33-10-35 in Franciscan basement at 2,242 ft. but is grading for a second wildcat to be drilled 570 ft. north and east of No. 1 Pezzoni.

In the Gaviota district of Santa Barbara County Republic Petroleum Co. has decided not to reenter an old hole on the Hollister lease but has selected location for a wildcat on a supposed structure farther inland.

Indiana Fields

(Continued from Page 68)

1,896 ft., 5½-in. casing set at 1,867 ft. Nash Redwine and others' No. 1 Woods unit, NE SW SW Section 1-7s-12w, total depth 1,909 ft., rigging to pump. Nash Redwine and others' No. 1 Reis, SW cor. NE Section 1-7s-9w, location.

Paul Rossi's No. 1 Randall, SW SE SE Section 30-6s-12w, oolitic lime at 2,805-10 ft., total depth, dry and abandoned.

Sun Oil Co.'s No. 3 Schroeder, SW SE NW Section 1-7s-12w, shot with 20 qt. at 1,878-88 ft., set 5½-in. casing at 1,872 ft. and waiting for cement to set. H. K. Riddle and others' No. 1 Greathouse, NE NE NE Section 13-7s-15w, a location.

Brown, Ryan and others' No. 1 Spencer, C E½ SE SE Section 26-7s-15w, total depth 2,882 ft., bailing to test.

Continental Oil Co.'s No. 1 Ford, NE NE NW Section 33-3s-14w, Aux Vases sand at 2,805 ft., Ste. Genevieve lime at 2,858 ft., total depth 2,942 ft., reamed out 2,891-99 ft., flowing by heads.

J. N. Roberts' No. 1 Keck, SW SE NW Section 34-3s-14w, total depth 2,805 ft., running tubing, estimated good for 75 bbl. per day.

In Pike County W. H. Neub and others' No. 1 Stone, SW NW NW Section 21-1n-7w, rigging up machine.

In Daviess County Ruble and others' No. 3 Walker, NE SW SE Section 4-2n-5w, drilling at 310 ft.

In Knox County Newton Pipe Line Co.'s No. 1 Like, C E½ NE Donation 171-2n-9w, dry and abandoned at 1,935 ft. Sun Oil Co.'s No. 1 Utt, SE cor. NW NW SE Donation 182-4n-9w, drilling at 3,147 ft. Hart & Williams' No. 1 Montgomery, C NE SW Section 28-5n-7w, dry and abandoned at 2,261 ft.

In Sullivan County O. H. Thayer and others' No. 1 Crowder, SE SW SW Section 3-7n-9w, drilling at 475 ft.

In Greene County Commonwealth's No. 1 R. Tucker, NW cor. NE SE NE Section 16-6n-6w, small showing of oil and gas at 885 ft., drilling at 954 ft. Shicker & Lyon's No. 1 Kiser, NW NW NW Section 4-7n-5w, drilling at 2,177 ft. in a hole full of water.

In Putnam County C. L. Williams' No. 1 Cooper, SW SW NE Section 10-13n-4w, drilling at 1,130 ft.

In Randolph County J. M. Seip and others' No. 1 Johnson, SW cor. NW NE NW Section 9-19-13e, oil sand at 1,044-71 ft., rigged up to make pumping test. Godwin and others' No. 1 St. John, C NE NE Section 8-21n-12e, shot with 60 qt. at 1,259-69 ft., rigged up to pump.

In Jay County Ellen Burke's No. 1 McFarland, SW NE SW Section 24-22n-14e, shut down at 1,041 ft. Petroleum Development Corp.'s No. 1 Binegar, NE cor. NW Section 29-24n-13e, shut down at 2,110 ft. Donald Davis' No. 1 Perry, NW NW NE Section 17-24n-12e, shut down at 985 ft.

In Starke County R. J. Violette, SE cor. SW NW SE Section 18-32n-4w, drilling at 120 ft.

In Jasper County U. S. Oil Producing Co.'s No. 1 Williams, C S½ SE SE Section 27-31n-5w, abandoned at 148 ft. U. S. Producing Co.'s No. 2 Williams, SW SE SE Section 27-31n-5w, abandoned at 145 ft. Clapsaddle & Harris' No. 1 Allen B, NE SE NE Section 34-32n-5w, shut down at 925 ft.

In Newton County Vaughn & Smith's No. 1 Goins, SW SE SE Section 33-32n-8w, hole full of water at 515-25 ft., show of oil and gas at 670-77 ft., preparing to run packer to 665 ft. for a production test. Total depth is 680 ft.

In Marion County White River Oil & Gas Co.'s No. 3 Indianapolis Water Co., NE cor. SW Section 15-16n-3e, rigging up machine.

In Fountain County Fountain Oil Co.'s No. 1 Glasscock, SE SE SW Section 2-18n-8w, drilling at 153 ft.

In Warrick County Wintner and others' No. 1 Brockman, SW NW NW Section 13-5s-9w, shut down at 300 ft.

S. R. Travis and others' No. 1 Moyer, NW SW NW Section 13-5s-9w, Ste. Genevieve lime at 1,813 ft., hole full of water at 1,907-20 ft., total depth; abandoned.

In Vanderburg County Vanderburgh Oil Corp.'s No. 11 Hornby, SE NW SW Section 33-5s-10w, Barlow lime at 1,977 ft., drilling at 1,989 ft. in a hole full of water.

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Texas and Louisiana Gulf

By
NEIL WILLIAMS

Wildcat Blows Out in Alta Loma; Extend Lolita Field

HOUSTON, Tex., May 27.—The blowout of a wildcat test in the Alta Loma area, Galveston County, and a major extension to the newly opened Lolita field, Jackson County, were the most important developments along the Gulf Coast district in the past week.

Stanolind Oil & Gas Co. opened a pool southwest of Alta Loma, southern Galveston County, when No. 1 J. A. Hulen blew out Wednesday, and ran wild for several hours, making an estimated 500 bbl. of fluid per hour and a large volume of gas. The blowout occurred while the crew was attempting to free stuck drill pipe as the result of excessive gas pressures encountered while coring at 9,156-66 ft., the total depth. The well is on a large block of acreage in the A. Brigham Survey north of the Greens Lake field, and southwest of the Dickinson field.

A major extension to the newly opened Lolita field, Jackson County, was indicated by the showing of Barnsdall Oil Co.'s No. 1 Lazarus about 1½ miles west of the discovery well. The sand section was topped at 5,907 ft., and a 9-minute drill-stem test at 5,916-22 ft. recovered 250 ft. of oil. Another core at 5,922-27 ft., recovered 2 ft. of sand showing 6 per cent saturation, and on a 37-minute drill-stem test at 5,921-27 ft. the well started flowing oil in 30 minutes, and after the testing tool was closed, 1,980 ft. of 35.5-gravity oil was recovered. The crew was coring ahead in oil sand.

The showing of this well sets the stage for an extensive drilling campaign as close-in protection acreage is held by numerous companies. The field was opened the previous week by Wellington Oil Co.'s No. 1 L. Ranch Co., completed through perforated casing at 5,933-37 ft., for an initial production of 41 bbl. of oil per hour, flowing through a ¼-in. choke.

Standard Oil Co. of Texas' No. 61-54 State, in Galveston Bay, offshore from Chambers County, is shut down awaiting orders after the well flowed 100 per cent salt water when tested through perforated casing at 8,563-66 ft. Casing was cemented after an electrical survey and sidewall cores showed possible sand sections at intervals from 8,500 to 9,000 ft.

On the northwest flank of the Port Neches field, Orange County, Phillips Petroleum Co. was preparing to test No. 1 Stark. The well was drilled 7,012 ft., and 5½-in. casing was cemented at 4,702 ft., preparatory to testing broken sections of sand and shale with probable oil and gas showings at 2,700-30 ft.; 2,945-70 ft.; 3,100-20 ft., and 4,540-70 ft. It is the most northerly well drilled on the structure, being about 1,000 ft. northwest of Texas Co.'s No. 1 Stark.

In the Martha field, Liberty County, Stanolind Oil & Gas Co. continues to test No. 1 Garrow, and it is showing indications of opening production from a new sand. Casing was perforated at 8,512-20 ft., and the well flowed dry gas, and recovered 130 ft. of brackish water.

In the Ogburn area, Harris County, Joyce Richardson's No. 1 E. H. Marks, J. C. Ogburn Survey is bottomed at 6,460 ft., and drill-stem test is being made after sand and shale with an oil and gas odor was cored at intervals from 6,394 to 6,460 ft. This prospect has been the scene of considerable wildcatting over a period of several years, and while no production has been developed, the favorable showings logged by several tests indicates the presence of structure and every well drilled in the area has attracted attention.

Favorable showings logged by two wildcats in Colorado and San Jacinto counties has shifted interest to the Tertiary Wilcox trend. In the Sheridan area, Colorado County, Shell Oil Co., Inc.'s No. 1 Plow Realty, recovered 1,100 ft. of oil and salt water on a drill-stem test, and the company was attempting to retest after making a squeeze job to eliminate the salt water content. The well is bottomed at 8,339 ft., and 7-in. casing was cemented at 8,337 ft. Details as to where the test was made were not available. Approximately ½ mile east of the well the company is preparing to spud No. 1 R. H. Goodrich.

In the Goodrich area, San Jacinto County, Shell Oil Co., Inc.'s No. 1 Coline recovered 9 bbl. of pipe-line oil and 9 bbl. of salt water on a drill-stem test at 7,577-90 ft., and the hole has been cored ahead to a total depth of 7,985 ft., where it is being reamed preparatory to making another test. The well is in the James Ranking Survey, about 4 miles southwest of Goodrich.

Location for another wildcat was announced for the Smithers Lake area, Fort Bend County, as material was moved in for Superior Oil Corp.'s No. 2 A. P. George, in the A. B. Kelker Survey, southeast of the company's No. 1 George, abandoned several weeks ago at a total depth of 8,010 ft.

In the Fairbanks field, and about 1,000 ft. southeast of production, Kirby Petroleum Co.'s No. 1 Harbaugh, T. M. Dorsey Survey, perforated casing at 6,824-25 ft., and the well is cleaning out through a 3/32-in. choke, making wash water and oil under a tubing pressure of 375 lb. and casing pressure 1,350 lb.

Louisiana Coast

Along the Louisiana coast in the Mermentau area, Jefferson Davis Parish, H. M. Naylor and others were preparing to retest No. 1 Acadia Development Co. after the well flowed gas and salt water through perforated casing at 9,703-20 ft. Working pressure built up to 2,350 lb. An electrical survey showed three probable oil and gas sands at 9,112-25 ft.; 9,238-48 ft., and at 9,703-18 ft.

Preparations were being made to test Barnsdall Oil Co.'s No. 1 Nelson, a wildcat on the Point Au Fer prospect in Terrebonne Parish. The hole has been plugged back from 11,731 ft. to 8,500 ft., and will be tested at 7,418-30 ft., where an electrical survey showed 7 ohms on normal curve, 5 ohms on the third curve and 2 ohms on the fourth curve. The survey also showed 4 ohms on normal curve, and 2 ohms on third curve at 7,020-40 ft. Location is in Section 2-21s-11e.

On the Chenier prospect, Cameron Parish, Phillips Petroleum Co.'s No. 1 Miami Corp. is bottomed at 10,511 ft., and the hole is being reamed. The well is attracting much attention due to showings of oil and gas reported in the last few weeks. Seventeen feet of gray sand with an oil odor was recovered in a core at 10,403-21 ft., and sand with a slight gas odor was reported cored at 10,421-87 ft. Sand with an odor of oil was logged the previous week at intervals from 10,258-69 ft. Location is in Section 11-4s-6w.

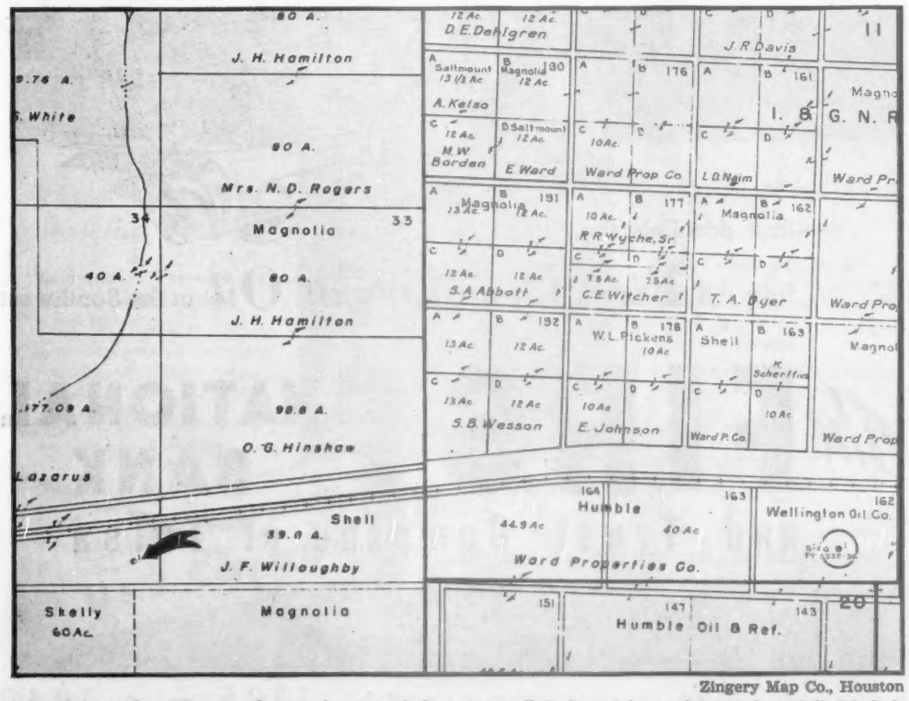
One mile south of the Chalkley field, Cameron Parish, Shell Oil Co., Inc. was preparing to deepen No. 1 Coastal Club after cementing 5½-in. casing on bottom at 10,100 ft. This well logged favorable showings in a new sand at 10,057-58 ft.

In Jefferson Davis Parish, Continental Oil Co. extended production in the South Roanoke field with the completion of No. 4 Sturdivant which flowed 91 bbl. of distillate in 9 hours through a 7/16-in. choke. The hole is bottomed at 9,978 ft., and 7-in. casing was cemented at 9,870 ft. The well is west of production in Section 35-10s-4w.

On the Calcasieu Lake salt dome, Calcasieu Parish, Superior Oil Co. abandoned No. 2 State. Salt was topped at 3,614 ft., and formation was drilled to 7,588 ft. Piling is being driven for the company's No. 3 State in Section 1-14s-9w.

California Co.'s No. 1 Delta Minerals, discovery well of the Lake Salvador field, Plaquemines Parish, perforated casing at 9,963-72 ft., and flowed 80 per cent oil and 20 per cent salt water. The well was originally completed through perforated casing at 9,963-74 ft., and has continued to make from 25 to 40 per cent salt water since completion.

(Continued on Page 92)



Zingery Map Co., Houston

Lolita field, Jackson County, showing location of discovery well (indicated by circle) and Barnsdall Oil Co.'s No. 1 Lazarus which marked up an important extension to the field

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Kansas Developments

By
DAL DALRYMPLE

Rice and Ellsworth Counties Have New Pools; Extensions

The number of pools in Kansas was increased in the past week by discoveries in Ellsworth, Rice and McPherson counties while two of the old pools were extended, these being Chase and Schroeder. Joe A. Aylward, Aylward Production Co. and Central Petroleum Co. made the Ellsworth County discovery in No. 1 Haska, CEL SE SE Section 6-16-10w, which at the week end was making 3 bbl. per hour from Arbuckle dolomite at 3,273½-90 ft., and still drilling. This well is 1½ miles northwest of the Stoltenberg pool.

Carlock & Shaffer's No. 1 Conrad, C W½ SW NE Section 15-20-6w, opened the new producing spot in Rice County in Mississippi chat at 3,308-12½ ft., where it had a good showing of oil. Seven-inch casing was set and plug will be drilled out some time this week. It is 1¼ miles northwest of the North Welch pool which produces from chat.

Richie, Moriarty and McPherson Drilling Co. extended the Chase pool in Rice County nearly ¾ mile to the northwest with No. 1 Reece, SW cor. Section 9-19-19w. It had a hole full of oil from Arbuckle dolomite at 3,207-14 ft.

South of the Ritz pool in McPherson County Saco Oil Co. and others' No. 1 D. Bitikofer, CNL NE NW Section 1-20-1w, produced 49 bbl. in 24 hours from Mississippi chat at a total depth of 2,916 ft.

The Schroeder pool in Ellsworth County appears to have been extended by Skelly Oil Co.'s No. 1 Jantzen, CNL NW SE Section 18-17n-9w, which had 3,100 ft. of oil in the hole 3½ hours after the oil was uncovered.

The Stoltenberg (Arbuckle) pool of southern Ellsworth County was assured a ¾-mile southwestward oil extension Tuesday by A. L. Derby, Jr., and Sharon Drilling Co. of Wichita.

Their No. 1 Novatny, located in the CNL NW NE Section 32-16-10w, topped the Arbuckle dolomite at 3,292 ft., and drilled to 3,308 ft. with saturation. Casing has been set for a production test.

Meanwhile, 2½ miles eastward, Barnsdall Oil Co. staked location for its No. 1 Matosh, in the CNL SE NE Section 34-16-10w. It is the west offset to the discovery well of the Ehler pool. Operators have moved in materials.

Northeastern McPherson County gained a semiwildcat test 3½ miles southeast of the Roxbury pool. John S. Barwick and J. W. Sheridan announced that they had signed a drilling contract with Broadwater Drilling Co. to drill a 3,200-ft. Arbuckle dolomite test at their No. 1 Heaton. Location of the well is in the C E½ SE SE Section 28-17-1w, 1 mile southeast of a wildcat test drilled by E. B. Shawver at his No. 1 Lilly, in the NE NW NW Section 28-17-1w, which was reported to have found a good show of oil in the Mississippi chat.

Ellis County

Cities Service Oil Co.'s No. 15 Rumsey, NE SE SE Section 23-11-17w, in the Bemis pool, made 3,000 bbl. of oil per day, initial potential, from a total depth of 3,643 ft. in Arbuckle dolomite.

Phillips Petroleum Co.'s No. 8 Hendricks, CSL SW NE Section 13-11-18w, Burnett pool, made 3,000 bbl. of oil daily from total depth of 3,374 ft. in Arbuckle.

Republic Natural Gas Co.'s No. 4-A Bemis, CNL NW SW Section 21-11-17w, Bemis pool, produced 3,000 bbl. of oil daily, maximum potential, from 3,477 ft., total depth, in Arbuckle.

Lario Oil & Gas Co.'s No. 1 Walters, C N½ NW NE Section 2-12-18w, located ⅝ mile north of the Walters pool, flowed 800 bbl. of oil in 24 hours from Arbuckle lime at 3,550 ft.

Cities Service Oil Co.'s No. 4 McCord, SE NE NE Section 26-11-17w, was building rig; Amerada Petroleum Co.'s No. 2 Hadley, W½ NW SE Section 31-11-17w, rigging up rotary; Phillips Petroleum Co.'s No. 5 Sites, NE NW SW Section 12-11-18w, was a location; J. J. Hall's No. 4 Oswald, SE SW NE Section 11-12-16w, rigging up; J. C. Shaffer's No. 2 Oswald, NW NE SE Section 11-12-16w, moving in material.

Estimated Daily Production

Estimated daily production for Kansas for the week ended May 25, and for the preceding week was as follows:

	Barrels	
	May 25	May 18
Oxford City	700	700
Burrton	8,000	8,050
Ritz-Canton	3,600	3,650
Graber	2,750	2,850
Hollow-Nikkel	1,450	1,450
Lerado	500	850
Voshell	1,550	1,550
Wellington	1,700	1,750
Ellsworth County.		
Lorraine	1,500	1,750
Other pools	2,130	2,320
Rice-Barton counties:		
Bloomer	3,400	3,850
Chase	4,100	4,050
Geneseo	2,950	2,800
Raymond	500	400
Silica	10,500	12,550
Keesling	850	700
Wherry	4,250	2,550
Miscellaneous Rice	2,980	920
Miscellaneous Barton	6,265	7,945
Trapp district	12,250	13,150
Balance Russell County	16,000	17,450
Sedgwick County	3,250	3,300
Ellis County:		
Bemis	7,100	6,700
Miscellaneous	5,700	7,475
Kingman County	555	555
Stafford County	7,235	7,780
Greenwood County	7,800	7,750
Eldorado	7,350	7,250
Other fields	33,585	33,105
Total Kansas	160,500	165,200

Wildcat Reports

Lauck & Mcncrief and others' No. 1 Gilkinson, CEL NE SW Section 21-22-16w, southwest of the Pawnee Rock pool in Pawnee County, was dry and abandoned at 4,125 ft. in Arbuckle lime. Magnolia Petroleum Co.'s No. 1 Smith, E½ NE NE Section 12-21-16w, was moving in material.

In Ellsworth County, Pryor & Lockhart and others' No. 1 Stratman, C W½ NW NW Section 1-17s-10w, topped Arbuckle lime at 3,278 ft., total depth at 3,297 ft., acidized and was completed for maximum allowable potential of 3,000 bbl. of oil. Emerich and others' No. 1 Hagy, W½ SW NE Section 20-16-10w, was rigging up rotary; Palmer Oil Corp.'s No. 1 Stratman, S½ SE NW Section 15-17-10w, location; Cities Service Oil Co.'s No. 1 Kanak, SW cor. Section 12-16-8w, location: Alva Billings' No. 1 Vanek, SW SW SE Section 25-14-10w, location.

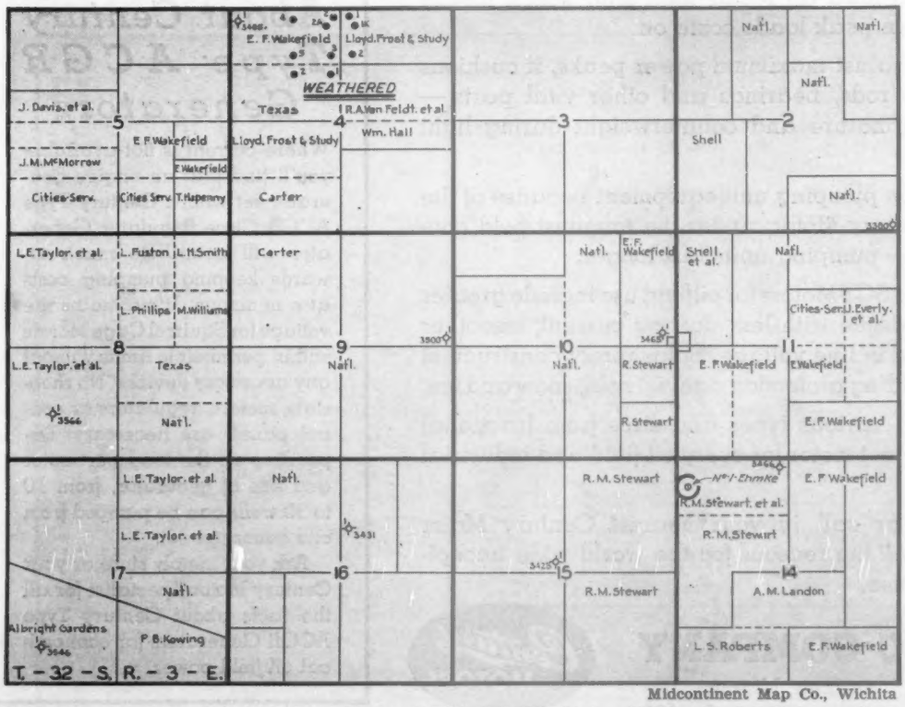
In Russell County, Simpson Oil Co.'s No. 1 Rush, C W½ NW SW Section 33-14-14w, topped Lansing lime at 2,939 ft., had 1 bbl. of water and a slight showing of oil at 2,985 ft., Arbuckle at 3,194 ft., water at total depth of 3,230 ft., and was abandoned. Jones Brothers' No. 1 Mahoney, S½ SW SW Section 8-14-12w, was rigging up machinery.

Bartlett and others' No. 1 Hulme, E½ SE SW Section 9-20-12w, Barton County, was drilling.

McPherson County

Republic Natural Gas Co.'s No. 4 Knackstedt, C S½ NW NW Section 30-20-5w, in the Bornholdt pool, made 152 bbl. of oil daily from total depth of 3,333 ft., in the Mississippian chat.

Same company's No. 1 Swanson, C S½ NW SW Section 18-20-5w, had total depth of 3,327 ft. in Mississippian and made 3,000 bbl. of oil per day.



Midcontinent Map Co., Wichita

R. M. Stewart and Ray Whortan's No. 1 Ehmke, C W½ NW NW Section 14-32-3e, Cowley County wildcat, was spudded. It is 3 miles southeast of the Weathered pool and 5 miles west of Winfield. Location is on a Carter Oil Co. block

Same company's No. 3 McMillan, CWL SE SW Section 7-20-5w, Bornholdt pool, made initial potential of 96 bbl. of oil daily from Mississippian chat at total depth of 3,379 ft.

Prunty Production Co.'s No. 1 Jones, SE SE NE Section 31-21-1w, was reported drilling at 1,835 ft.

First reports of new wells in other counties were as follows:

Cowley County

Winkler-Koch's No. 8 Ferguson, NE SW SW Section 21-30-8, location; Hawkeye Oil Co.'s No. 7 Hittle, NE SW NE Section 21-31-4, drilling 2,375 ft.; E. B. Shawver's No. 2 Davis, SW NW NE Section 21-30-4, drilling 1,000 ft.; O. J. Connell's No. 1-A Clark, NW SE SW Section 31-30-4, digging cellar; Ryan Consolidated's No. 3 Couth, NW SE SE Section 13-30-5, location.

Russell County

W. I. Southern's No. 1 Sellens, SW SE SE Section 20-15-13w, location; Cities Service Oil Co.'s No. 3 Eichman, W½ NW SE Section 12-15-14w, drilling at 150 ft.; same company's No. 8 Podszus, N½ NW SW Section 25-15-14w, drilling at 560 ft.; Shell Oil Co., Inc.'s No. 1 Dumler, NW SW SW Section 36-15-14w, cellar; Coralena Oil Co.'s No. 1 Flickenger, S½ SE SE Section 23-14-13w, location; same company's No. 2 Phinney, N½ NW NE Section 30-14-13w, rigging up; Helmerich & Payne, Inc.'s No. 3 Boxberger, S½ S½ NE Section 21-14-14w, waiting on cement at 376 ft.; A. H. Witt's No. 7 Witt, SE NW SE Section 3-14-15w, rigging up; Wolf Creek Oil Co.'s No. 6 Rouback, N½ S½ NW Section 15-14-15w, spudding.

Ellsworth County

Continental Oil Co.'s No. 4 Fuller, NE NE SE Section 28-17-8w, building rotary rig; Derby Oil Co.'s No. 1 Schepman, E½ SE NW Section 16-16-10w, location; Indian Territory Illuminating Oil Co.'s No. 1 Boye, E½ NE NW Section 16-16-10w, location; Lario Oil & Gas Co.'s No. 2 Mehl, S½ SE SE Section 35-16-10w, rigging up; Lauck & Moncrief's No. 1 Meyer, NW cor. Section 35-16-10w, rigging up.

Forest City Basin

ST. JOSEPH, Mo., May 27.—The past week saw discovery of the third Forest City basin oil well and locations for more wildcat tests. At a total depth of 1,596 ft., in Mississippi lime topped at about 1,470 ft., Young & McLaughlin's No. 1 McLeod in C NW SW Section 4-10s-20e, Jefferson County, Kansas, came in for a small producer. As the week ended operators were pumping 40 bbl. a day, but a real potential had not been established.

North of this well, in SW NE NW of the same section, an 8,000,000 cu. ft. gas well was brought in last November at 1,455 ft., in Bartlesville sand. Being a hunt for oil, the test drilled ahead and found good Mississippian oil showings and drilled on into the Hunton, topping that lime at 1,874 ft. Total depth was 1,916 ft., long fishing jobs ensued and the well was plugged back to Mississippian and acidized. This was a failure, possibly because water had stood for so long. The well never has been formally completed as a gasser.

The second well did not have the gas sand, but developed good oil showings in the Mississippian at 1,492 ft. and still better ones at 1,504 ft. It was deepened and packer was set at 1,475 ft. for acidization. Acid ate around the packer and the test drilled ahead. It then was deepened to 1,596 ft. and oil rose to 1,190 ft. in the hole, carrying some gas.

Dan McLaughlin of Des Moines, Iowa, a paving contractor, drilled the well, also the gas well. He is known to be planning others in the same area and in addition has gone into Page County, Iowa, for further wildcatting. The Smythe, McLaughlin and others' No. 1 Hook in C NE NW Section 18-69n-35w, was spudded to 26 ft. on May 14 to hold leases and at this time a drilling machine is being rigged up. Page County is in the Forest City basin.

Only two Missouri tests are at interesting stages at this moment. George Vincent's No. 1 Dillingham in C NE SW Section 16-53n-34w, Platte County, is drilling below 1,200 ft. in Mississippian lime and Brin & Nathan's No. 1 Decker in C NW NW Section 1-61n-38w, Holt County, was running 8-in. casing to 1,450 ft., having a hole full of water in a water sand in the Cherokee formation.

Harry Harper, who was drilling contractor for the Pawnee Royalty Co., owner of the first two Nebraska wells, is digging cellar for a test south and east of the second Nebraska well in the Falls City area, Richardson County. Harper's lease is the north 80 acres in the NW Section 20-1-16, and his location is in the 10 acres in the southeast corner of that eighty. This puts him ½ mile south and ⅝ mile east of No. 1 Bucholz, which is flowing 330 bbl. of oil daily. Harper's well should answer questions raised over direction of the trend. Harper will use rotary tools and will set 7-in. casing on top of the Hunton, expected at approximately 2,200 ft. Hunton in the No. 1 Bucholz was topped at 2,217 ft.

To the north, in Nemaha County, Sonken-Galamba Corp. of Kansas City, Mo., is reported to have made two locations and to have contracted with Davis Brothers of Independence, Mo. One location is given as No. 1 C. Ord in C NW NW Section 8-5n-14e, and the other as No. 1 Lehr in C SE SE Section 25-5n-14e.

To the west, but still in Richardson County, E. L. Dodge is completing rig for the Forest City Syndicate's No. 1 Windle in SE NE NE Section 3-1n-15e. Both rotary and standard tools are on the location.

East Texas Fields

(Continued from Page 70)

tract, 3,528-31 ft., 65 bbl. Gross & Schulman's No. 1 E. L. Walker, 3,718-20 ft., 10 bbl.

Gregg County—Longview Area

Humble Oil & Refining Co.'s No. 51 W. R. Hughes, 3,628-44 ft., 45 bbl.

Rusk County—Joiner Area

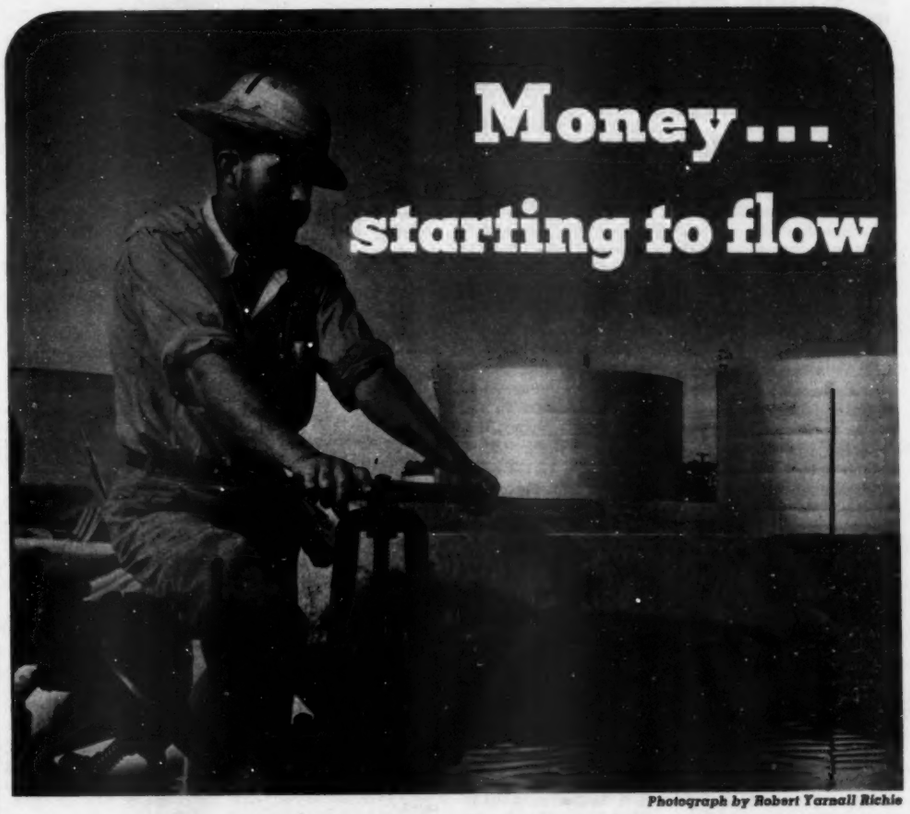
A. McCutchin's No. 3 fee, 3,514-3,613 ft., 25 bbl. in 8 hours, pumping.

Smith County—Joiner Area

M. H. McMurray's No. 20 H. Robinson, 3,794-3,803 ft., 50 bbl.

Upshur County—Longview Area

T. W. Lee's No. 1 Harper, 3,622-32 ft., 40 bbl.



Photograph by Robert Yarnall Richie

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B. F. Phillips' No. 3 C. B. Everett, 3,677-78 ft., 40 bbl.

EAST CENTRAL TEXAS COMPLETIONS

(24-hour gages)

Anderson County

A wildcat, R. H. Williamson's No. 1 O. G. Rogers, William Greenwood Survey, made 55 bbl. salt water and 35 bbl. distillate from Woodbine sand from 5,380-90 ft., plugged and abandoned at total depth of 5,407 ft.

Falls County

A wildcat, M. Hays' No. 1 A. N. Taylor, dry and abandoned at total depth of 1,204 ft.

Houston County

In the Grapeland gas field Lone Star Gas Co. and Trinity Gas Co.'s No. 1 H. Daily, 5,906-45 ft., 75,000,000 cu. ft. of gas. Lone Star Gas Co. and Trinity Gas Co.'s No. 1 G. E. Dorsey, 5,961-6,004 ft., 75,000,000 cu. ft. of gas. Lone Star Gas Co.'s No. 1 A. W. Hughes, 5,979-6,013 ft., 75,000,000 cu. ft. of gas.

Titus County

In the Talco field Magnolia Petroleum Co.'s No. 3 E. V. Duke, 4,666-76 ft., 252 bbl daily.

NORTH TEXAS COMPLETIONS

Archer County

Chapman & McFarlin's No. 6 L. F. Wilson E, 3,946-65 ft., 756 bbl. Cochran & Cain's No. 3 Dr. J. A. Little B, 1,305-10 ft., 150 bbl. Continental Oil Co.'s No. 14 L. F. Wilson McCrory, 4,345-73 ft., 744 bbl. Cox & Hamon's No. 3 Dr. J. A. Little Big, 4,353-4,417 ft., 1,128 bbl. Gulf Oil Corp.'s No. 17 P. Siegel, 4,324-98 ft., 1,296 bbl. Helmerich & Payne's No. 6 J. N. Shephard, 4,274-4,317 ft., 245 bbl. Ligon and Deep Oil Development Co.'s No. 5 L. F. Wilson, 3,759-80 ft., 800 bbl. Moran Brothers, Inc.'s No. 2 Ray Carson, 4,307-45 ft., 1,265 bbl. Panhandle Refining Co.'s No. 8 F. C. Green C, 1,121-28 ft., 65 bbl. W. H. Peckham's No. 1 C. Krebs, 4,365-99 ft., 564 bbl. Peterson & McCarty's No. 35 L. F. Wilson B, 4,321-80 ft., 1,200 bbl. Petroleum Producers Co.'s No. 3 S. R. White and others, 4,392-4,417 ft., 875 bbl. Petroleum Producers Co.'s No. 5 L. F. Wilson McCrory, 4,353-85 ft., 991 bbl. E. F. Scott's No. 1 York, abandoned location. L. Sikes' No. 1 E. G. Cowden, abandoned location.

Baylor County

British American Oil Producing Co.'s No. 2 F. C. Green L, 3,081 ft., dry.

Cooke County

Cox & Hamon's No. 10 K. Neu A, 4,991-5,003 ft., 546 bbl. Cranfill & Staley's No. 1 Peery, 2,505 ft., dry. John Gray's No. 1 W. M. Wyatt, 2,514 ft., dry. Humble Oil & Refining Co.'s No. 1 G. H. Hellman, 1,671-1,716 ft., 16 bbl. Kingery Brothers' No. 9 Alice Johnson, abandoned location. Sinclair Prairie's No. 12 P. McGeorge, 4,903-39 ft., 600 bbl. Trumpter Petroleum Corp.'s No. 18 G. T. Andress, 1,457 ft., dry.

Foard County

Domain Oil Co.'s No. 1 Wishon, 4,001 ft., dry.

Jack County

Target Drilling Co.'s No. 3 A. B. Kuykendall, 3,206-42 ft., 720 bbl. Three B Investment Corp.'s No. 3 J. Matlock B, 3,055-3,204 ft., 35 bbl.

Montague County

Anderson Prichard Oil Corp.'s No. 1 W. L. Reed, 4,325-52 ft., 1,720 bbl. Walter H. Gant's No. 1 J. W. Robinson, 4,300 ft., dry. Lesh & McCall's No. 1 C. Holt, 1,857 ft., dry. Ramsey Petroleum Corp.'s No. 1 W. H. Magee, 6,533 ft., dry. Seitz, Comegys & Seitz' No. 1 Everett B. King, 4,066 ft., dry. Stanolind Oil & Gas Co.'s No. 2 R. T. McCool, 5,431 ft., dry. Youngblood & Foree's No. 1 M. N. Beasley, 3,396 ft., dry.

Wichita County

Bianco and Al Buchanan Production Co.'s No. 2 Fred Thom, 3,785-3,843 ft., 1,440 bbl. Deaton and others' No. 1 W. F. George, 1,466 ft., dry. E. C. Oil Co.'s No. 8 A. W. Burnside, 3,985-4,017 ft., 10 bbl. Falls Refining Co.'s No. 1 J. D. Tidwell, 3,750-3,860 ft., 95 bbl. H. H. Fraser's No. 1 J. L. Long, 1,614 ft., dry. W. B. Hamilton's No. 4 N. H. Martin E, 553-58 ft., 10 bbl. Hanlon-Buchanan, Inc.'s No. 10 Fassett & Tuttle E-1 3,995-4,089 ft., 525 bbl. Hanlon-Buchanan, Inc.'s No. 17 Fassett & Tuttle G, 4,062-80 ft., 250 bbl. King Oil Co.'s No. 14 Dale, 1,954 ft., dry. A. L. Lowe's No. 1 M. D. Anderson, 3,750-3,882 ft., 57 bbl. Southport's No. 11 State lands, 3,925 ft., junked. Tide Water Associated Oil Co. and others' No. 10 Anna Mangold, 3,689-3,745 ft., 832 bbl. Venmex Oil Corp.'s No. 11 State lands, 3,694-3,816 ft., 1,102 bbl.

Wilbarger County

Phillips Petroleum Co.'s No. 3 Waggoner KKK, 2,675 ft., dry. Pois & Schulz's No. 1 E. M. Barnes, 3,768-4,065 ft., 25 bbl. Pois & Schulz's No. 2 E. M. Barnes, 1,797 ft., dry. Texas Co.'s No. 27 W. T. Waggoner E, 2,383-95 ft., 17 bbl.

Young County

Holbrook & Wood's No. 14 Watson, 542-57 ft., 10 bbl. E. W. Robitaille's No. 5 J. C. Vaughan A, 3,900-4,002 ft., 2,100 bbl. Tex-Tor Oil Corp. and McLester's No. 2-C J. F. Knight, 3,736-55 ft., 29,965 bbl.

West Texas Fields

(Continued from Page 69)

the north and west lines of an 81-acre tract in Section 31, D.&D.A. Survey, south of the discovery. Farrell's No. 1 Mrs. Elizabeth Marech is a west offset to the field opener and is in Section 18, D.&D.A. Survey. Knowles located No. 1 F. B. Reid, east of the discovery and C NW NW NW Section 31, D.&D.A. Survey.

South of Anson and east of the recently opened Triplett area, location was made for Thomas D. Humphrey's No. 1 W. H. Hollis, SW cor. Hollis tract, on the north side of the Clear Fork River and in a 200-acre tract of the W. S. Brown Survey 255. The location is about 6 miles northwest of the town of Hawley. Three locations were made on the Hollis tract by Ungren & Frazier and Shaheen. They will be Nos. 1, 2 and 3 Hollis.

Callahan County

A new producing spot has been opened in north central Callahan County by Ungren & Frazier and Beams Drilling Co. The field opener is No. 1 I. N. Jackson, 8 miles north of Baird, and 1,980 ft. from the west and 220 ft. from the north lines of the south 104 acres of Section 85, Block 13, T.&P. Survey. The well was still testing as the week closed but was reported making about 150 bbl. daily, with considerable gas.

New Locations

Three new locations were reported, one each in Eastland, Callahan and Jones counties. Eastland County accounted for a deep 3,350-ft. wildcat 4 miles southwest of Cisco. It is Groover & Rose and Jones & Stasney's No. 1 C. W. McElreath, SW Section 104, Block 3, H.&T.C. Survey. Materials are being moved to the location and it is projected to the McCluskey sand.

Callahan County's new test is H. W. Lee's No. 1 Mrs. Murray Harris, SW cor. NW SW Section 99, B.B.B.&C. Survey. It is contracted to the shallow 1,250-ft. sand.

Jones County's location, which has been spudded and is drilling below 150 ft., is George Callihan's No. 1 J. J. Steele, NE SE Section 11, Block 15, T.&P. Survey. It is contracted to 2,300 ft.

WEST CENTRAL TEXAS COMPLETIONS

(24-hour gages)

Brown County

In the Blake field L. H. Choate's No. 2 Howell, dry and abandoned at 1,228 ft. A wildcat, Poteet's No. 1 Williams, J. F. Roberts Survey 79, dry and abandoned at total depth of 1,160 ft.

In the Cross Cut field G. Eakin's No. 1 Gaines, 1,315-25 ft., 10 bbl.

In the Fry field Ed Selvidge's No. 1 White, dry and abandoned at total depth of 1,317 ft.

In the Sewalt gas field Jordan's No. 1 Sewalt, 940-74 ft., 30 bbl. oil and 30 bbl. water.

Callahan County

Wildcat tests, C. J. Kleiner's No. 1 Williams, Section 62, B.O.A. Survey, dry and abandoned at total depth of 1,100 ft. Fox & Sunn's No. 1 A. G. Berry, Section 78, B.O.A. Survey, junked and abandoned at total depth of 910 ft.

Coleman County

In semiwildcat territory Quinn, trustee's No. 1 Duty-Stevens, Section 25, H.&T.B. Survey, dry and abandoned at total depth of 1,835 ft.

A wildcat, Davis-McDonald's No. 1 Stafford, dry and abandoned at total depth of 1,853 ft.

Comanche County

In the Amity field L. H. Choate's No. 1-A Shultz, dry and abandoned at total depth of 585 ft.

A wildcat, Heydrick's No. 1 Wagnon, junked and abandoned at total depth of 425 ft.

Eastland County

In the Cisco field Hickok Production & Development Co.'s No. 1 Wright-Howell, 3,464-82 ft., 20 bbl., pumping and flowing.

Jones County

In the Lewis field Snoddy & Falls Refining Co.'s No. 2 Robinson, 1,875-83 ft., 222 bbl. Peckham's No. 11 Brock, 1,890-1,902 ft., 500 bbl. Petroleum Production Co.'s No. 5 McKeown, 1,850-72 ft., 52 bbl. King Oil Co.'s No. 13 Carter, 1,910-22 ft., 30 bbl. Fain-McGaha Oil Corp.'s No. 12 Lewis, 1,902-13 ft., 50 bbl.

Wildcats: Farrell's No. 1 Reid, Section 31, D.&D.A. Survey, 2,570-73 ft., 30 bbl. Keeler's No. 1 Radford, Section 20, Block 16, T.&P. Survey, junked and abandoned at total depth of 908 ft.

Shackelford County

In the Ghio field Baker's No. 2 Ghio, dry and abandoned at total depth of 603 ft. Baker's No. 3 Ghio, dry and abandoned at total depth of 601 ft. Baker's No. 1 Walker, dry and abandoned at total depth of 908 ft.

In the Sedwick field Roark's No. 4 Hickman, 660-64 ft., 15 bbl. Grossenbacher's No. 5 Hickman, 657-65 ft., 25 bbl.

In the Cook field Roeser-Pendleton, Inc.'s No. 1-B-113 Cook, dry and abandoned at total depth of 1,627 ft.

Stephens County

In the Stribling field Falcon Oil Co.'s No. 1 Robertson, 3,552-62 ft., 217 bbl.

PANHANDLE COMPLETIONS

(24-hour gages)

Carson County

Magnolia Petroleum Co.'s No. 78 fee, 3,100-3,130 ft., 147 bbl. Ryan Consolidated Oil Co.'s No. 14 Block, 3,025-3,105 ft., 86 bbl., pumping. Ryan Consolidated Oil Co.'s No. 15 Block, 3,050-3,150 ft., 77 bbl., pumping. Ryan Consolidated Oil Co.'s No. 16 Block, 3,045-83 ft., 65 bbl. Texas Co.'s No. 25 Boney, 3,095-3,125 ft., 354 bbl., pumping.

Gray County

King Oil Co.'s No. 7 Simpson, 3,185-3,255 ft., 369 bbl., pumping.

Hutchinson County

Gulf Oil Corp.'s No. 3 Christian, 2,895-2,987 ft., 281 bbl., pumping. Gulf Oil Corp.'s No. 96 Dial, 3,030-66 ft., 170 bbl., pumping. McIlroy Oil Co.'s No. 13 Haile, 2,965-3,001 ft., 602 bbl., pumping. Shell Oil Co., Inc., and Sinclair Prairie Oil Co.'s No. 1-B Pritchard, 3,130-75 ft., 3,450,000 cu. ft. gas.

Moore County

Texoma Natural Gas Co.'s No. 7-M Coon-Sneed, 2,740-2,955 ft., 28,675,000 cu. ft. gas. Texoma Natural Gas Co.'s No. 23-P Sneed, 2,644-3,080 ft., 12,064,000 cu. ft. gas. Canadian River Gas Co.'s No. 3-A Thompson, 2,520-2,633 ft., 39,635,000 cu. ft. gas.

Wheeler County

Smith Brothers' No. 13 Harlan, 2,410-75 ft., 139 bbl., pumping.

Government Cars

The federal Government last year owned approximately four times as many motor vehicles as it owned only a decade ago, while the number of vehicles owned by state, county, and municipal governments has been more than doubled. While the number of governmental vehicles was rising 161 per cent, the registrations of privately owned vehicles, which last year was 30,615,087, rose only 15½ per cent.

Southwest Texas District

By
F. L. SINGLETON

Open Pool in Laguna Madre Bay, in 6,800-ft. Frio Sand

CORPUS CHRISTI, Tex., May 27.—A new producing area, 1½ miles east of the Flour Bluff field, Nueces County, was opened by Humble Oil & Refining Co.'s No. 1-D State, in Laguna Madre Bay, Nueces County. The well made an initial production of 178 bbl. of 41-gravity oil, flowing through ¼-in. choke with tubing pressure 1,725 lb. It was drilled to a total depth of 6,955 ft., and production is from the Frio sand through perforated casing at 6,790-6,800 ft. The well is on the downthrow side of a major fault flanking the east side of the field.

Colton & Colton were preparing to test No. 1 Etta Terrell, in the J. P. Sideck Survey, a prospective pool opener 2½ miles southwest of the Cologne field, Victoria County. The hole is bottomed at 5,285 ft., and 7-in. casing was cemented at 5,284 ft., after a 7-minute drill-stem test at 5,263-85 ft. showed 30-lb. working pressure and recovered 225 ft. of pipe-line oil. Six feet of sand showing good saturation was recovered at intervals from 5,264 to 5,285 ft.

In the southern part of the county, S. J. Ryan's No. 1 Bankers Mortgage Co., A. Esparza Survey, is shut down at 6,003 ft., and the operator is expected to make drill-stem test of a sand section logged by an electrical survey at 5,600-10 ft. The survey showed 4 ohms resistivity on the fourth curve, 5 ohms resistivity on normal survey and 24 millivolts porosity.

Two producers were recorded in the Victoria field. W. V. Hardin's No. 2 Bass is showing for a producer while testing through perforated casing at 3,035-40 ft., while Magnolia Petroleum Co.'s No. 1 Simon is being rigged up to pump after the well failed to flow when tested through perforated casing at 3,050-53 ft.

In the same county, and in the Keeran field, Gulf Oil Corp. extended production 1 mile west, with the completion of No. 18 Keeran. The well was drilled to a total depth of 6,449 ft., and was completed through perforated casing at 4,812-13 ft., for an initial production of 103 bbl. of oil and 10 per cent salt water in 24 hours, flowing through a 7/64-in. choke. Tubing pressure was 850 lb. and casing pressure 525 lb.

In the Bloomington area, Victoria County, Texas Gulf Producing Co.'s No. 1 Kester flowed dry gas after the casing was reperforated at 5,013-15 ft. The well was originally tested through perforations at 5,883-85 ft., and flowed 1½ bbl. of fluid per hour through a 7/64-in. choke, 80 per cent of which was pipe-line oil and the balance sediment and water. Northeast of the well, in the F. Perez Survey, the same company staked location for No. 1 Wisenheart.

Along the Cockfield trend, through the eastern half of Duval County, Bridwell Oil Co. is cementing preparatory to testing No. 1-A W. L. Rogers, a wildcat 3 miles southwest of the Fitzsimmons field in the J. Poitevent Survey 21. Sand with an oil and gas odor was cored at 4,321-25 ft., and on an 8½-minute drill-stem test through ¼-in. chope on top and ⅜-in. choke on bottom, the well tested 300 lb. working pressure, and recovered 100 ft. of oil. Sand was cored at 4,325-27 ft., the total depth, and 5½-in. casing is being cemented for completion after a 10-minute drill-stem test at 4,321-27 ft. showed 250 lb. working pressure and 210 ft. of oil.

The newly opened Orange Grove field, Jim Wells County, was extended 1 mile northeast by H. H. Howell's No. 1 Emil Schrade, which was completed through perforated casing at 5,087-96 ft., for a production of 140 bbl. per day, flowing through a 7/64-in. choke with 800 lb. working pressure on the tubing and 1,000 lb. on the casing. The operator started drilling No. 2 Schrade, a northeast offset, and Magnolia Petroleum Co. is moving in material for No. 1 H. G. Schmidt, a south offset.

In the Wade City field, but southwest of production, Henshaw Brothers' No. 1 Wendt is reported to have tested salt water in the 4,800-ft. sand and the well is being drilled ahead to the 4,900-ft. pay. About 2,000 ft. north of production, J. V. Calvert and others' No. 1 Spoetzel is flowing at the rate of 105 bbl. of fluid per day through a 5/32-in. choke, the fluid varying from 60 to 40 per cent of salt water. Tubing pressure was 850 lb. and casing pressure 1,690 lb. Mid-Continent Petroleum Corp.'s No. 1 Schonovogel, an east outpost in the Orange Grove area, was abandoned at a total depth of 5,433 ft.

Another wildcat was announced for the county as M. M. Miller & Sons staked location for No. 1 T. M. Gallagher, about 2½ miles east of the town of Sandia, in the Casa Blanca grant.

Offshore from Kleberg County in Laguna Madre Bay, Skelly Oil Co. cemented 7⅝-in. casing at 7,669 ft. in No. 1 State, and a production test is scheduled to be made this week. The well was drilled to a total depth of 8,531 ft., and no additional showings of oil or gas have been reported since the drill-stem test at 7,455-60 ft. recovered 240 ft. of pipe-line oil and developed several hundred pounds of working presure.

In the Laredo district, Webb County, Glenda Oil Co. is cementing casing for a production test of No. 1 Saldivor Ranch, Block 5, E. Garnger subdivision, Section 657, J. V. Barrego grant. Sand with a good showing of oil was cored at 1,001-08 ft., and casing is being cemented without making a drill-stem test.

The Glen field, Webb County, was extended 934 ft. northwest with the completion of Interstate Minerals Corp.'s No. 47 Lopez. Sand was logged at 2,158-64 ft., and the well flowed 56 bbl. of oil per hour through ½-in. choke. Transwestern Oil Co.'s No. 1 A. B. Bruni is being tested at a total depth of 2,174 ft. Sand showing oil was recovered in a core at 2,170-72½ ft.

Sinclair Prairie Oil Co.'s No. 1 Callaghan, a Tertiary Wilcox project in Webb County, was abandoned at 9,501 ft. after several attempts to drill-stem test the sand section at 5,890-5,900 ft. failed. No shows were reported in the Wilcox formation, and the well was plugged back after sidewall cores at 5,895 ft. recovered sand with an odor of oil.

Much attention was attracted to La Salle County where H. R. Cullen and others are reported to have logged a showing of oil and gas in the Tertiary Wilcox in No. 1 J. L. Washburn. Sand, with an odor of oil and gas, was reported cored at 4,865-78 ft., and the well is said to have shown several pounds of working pressure and an unestimated quantity of oil-cut drilling mud. The well is being drilled "tight" and details as to where the test was made are not available. The well is located about 7 miles southwest of Fowlerton in the L. W. Earnest Survey 88.

Southwest of the Sun field, Starr County, Sun Oil Co.'s No. 1 Lehr is bottomed at 5,542 ft., and 5½-in. casing was cemented at 4,468 ft., preparatory to testing oil and gas showings logged by an electrical survey.

SOUTHWEST TEXAS COMPLETIONS IN PROVEN FIELDS

Aransas-San Patricio Counties

McCampbell field: Bay-Tex Oil Corp.'s No. 1 Usher, perforated casing 7,473-79 ft., gas well. Southern Minerals Corp.'s No. 5 McCampbell, perforated casing 7,122-30 ft., 137 bbl., ¾1in. choke. H. H. Wagner's No. 2 Farley, perforated casing 6,785-93 ft., 193 bbl., ½-in. choke.

Calhoun-Victoria Counties

Heyser field: Gulf Oil Corp.'s No. 35-B Traylor, sand 5,480-95 ft., 282 bbl., 9/64-in. choke.

Duval County

Cedro Hill field: Humble Oil & Refining Co.'s No. 9-F Duval County Ranch Co., 1,430 ft., 14 bbl. in 6 hours, pumping. Humble Oil & Refining Co.'s No. 11-F Duval County Ranch Co., 1,443 ft., 11 bbl. of fluid in 6 hours, 3 per cent salt water, pumping. Humble Oil & Refining Co.'s No. 12-F Duval County Ranch Co., 1,443 ft., 29 bbl. of fluid in 9 hours, 5 per cent salt water. Hoffman field: Cuellar Brothers' No. 1 fee, sand 2,832-52 ft., 9 bbl. of oil, pumping. Magnolia Petroleum Co.'s No. 10 Well, sand 2,664-79 ft., 90 bbl. of oil, ¼-in. choke.

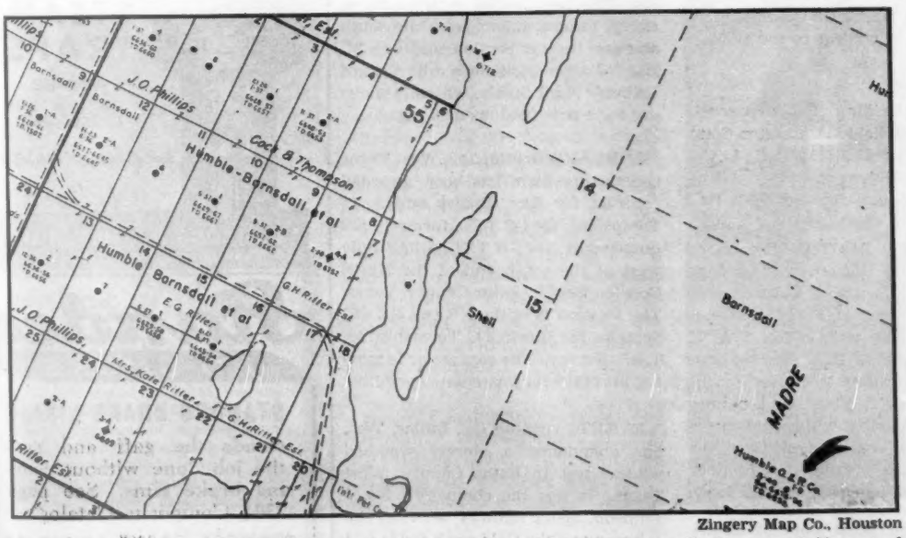
Guadalupe County

Elm Creek field: J. E. West and others' No. 3 Hartfield, sand 757-87 ft., 3½ bbl., pumping. E. A. Weyel's No. 5 Mattke, 710 ft., 2½ bbl., pumping.

Jim Wells County

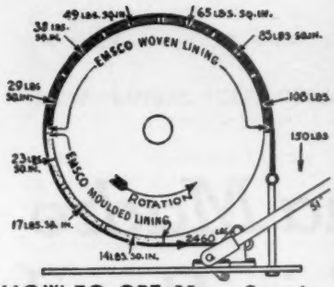
Premont field: M. Stover's No. 1-A Lozano, perforated casing 2,350-55 ft., 140 bbl. of fluid, 80 per cent water,

(Continued on Page 91)



Zingery Map Co., Houston

Humble Oil & Refining Co.'s No. 1-D State (indicated by arrow) the discovery well of a new field, east of the Flour Bluff field, Nueces County in Laguna Madre Bay



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Among the Drilling

HOUSH & THOMPSON are completing a well in the Eola field, Avoyelles Parish, coastal Louisiana, for Gulf Refining Co., and have one active operation in the Shepherd area, San Jacinto County, Texas, for Harrison & Abercrombie. In the Greens Lake area a new operation is being started for Sun Oil Co. while at the Orange field, drilling is being started for Gulf Oil Corp. on No. 5-B LeFlor.

ALLEN & MORRIS have three active operations offshore from the East White Point field in Corpus Christi Bay, Texas, for W. R. R. Oil Co. and Sinclair Prairie Oil Co., while in the West Ranch field a new operation is being started for American Liberty Oil Co. In the Agua Dulce, one rig is running for the Agua Dulce Oil Co., while in La Rosa field, Refugio County, another operation was started for the Coronado Corp.

RUTHERFORD Drilling Co. marked up a slight southeast extension to the Fairbanks field, Harris County, Texas, with the completion of Kirby Petroleum Co.'s No. 1 Harbaugh. The well was drilled to a total depth of 6,859 ft., and is being completed through perforated casing in the 6,800-ft. sand.

GEORGE ECHOLS is moving a rotary to the Aldine area, Harris County, Texas, where location was made for his company's (Titanic Oil Co.) No. 1 H. S. Weary, southeast of production. Another rig is operating in the League City field, Galveston County, for Phillips Petroleum Co., while in Liberty County drilling was resumed on Titanic Oil Co. and others' No. 1 Boyt, a wildcat in the H.&T.C. Survey.

NOBLE Drilling Co. apparently opened a new field in Galveston County, Texas, as Stanolind Oil & Gas Co.'s No. 1 Hulen, showed considerable oil at a total depth of 9,166 ft.

LOFFLAND BROTHERS received contract for a 9,500-ft. wildcat from Superior Oil Corp. to be drilled in the Smither's Lake area, Fort Bend County, Texas. The well is No. 2 A. P. George in the A. B. Kelker Survey. Another operation is located in the Thompson field, Fort Bend County for H. M. Naylor, while in Beauregard Parish, coastal Louisiana, the company's No. 1 Long Bell Lumber Co. was abandoned at a total depth of 10,224 ft.

GLENN McCARTHY has reached a depth of 10,640 ft. in his No. 1 Munson, a wildcat in Brazoria County, Texas. In the Chocolate Bayou field his No. 2 Houston Farms Development Co. was abandoned, while in the League City field, Galveston County, a new operation is being started for Phillips Petroleum Co.

FALCON-SEABOARD Drilling Co. is drilling below 9,700 ft. in Pure Oil Co. and others' No. 1 Garcia, a wildcat in Cameron Parish, Louisiana, while in Iberville Parish, coastal Louisiana, the company's No. 1 Folse is preparing to spud.

CROSBY Drilling Co. is moving in a rotary to Calhoun County, Texas, for Ray N. Ranger's No. 1 W. R. Sells, a projected 9,000-ft. wildcat located near the town of Olivia in the Sam Houston Survey.

CHRISTIAN-CARPENTER Drilling Co. cored sand with an odor of oil and gas in Joyce Richardson's No. 1 E. Marks, a wildcat located in the Ogburn area, Harris County, Texas, and a drill-stem test was being made. The sand section was logged at 6,394-6,460 ft., the total depth.

JORDAN Drilling Co. abandoned the company's wildcat, No. 1 Lula Dodd, Grimes County, Texas, at a total depth of 3,770 ft. The well was drilled jointly with D. M. Wallace.

KENT & PRESTON, West Texas drilling contractors, are moving in materials to start a test in Mitchell County, West Texas, for B. R. S. Oil Co. The test is No. 1 Mrs. M. A. Berry, located 467 ft. from the south and east lines of Section 83, Block 97, H.&T.C. Survey, about a mile west of Hilbun's No. 1 Strain, which is showing for a new field opener.

MIDLAND Drilling Co., West Texas contracting firm, has been awarded contract for Ray Rhodes and J. D. Tompkins' No. 1-C TXL, formerly announced at No. 1-B TXL, a half mile west of the south end of the North Cowden field in Ector County, Texas. The location is in the NE cor. SE SW Section 23, Block 43, Township 1s, T.&P. Survey. The contractor is moving in rotary for immediate spudding.

EVERTS Drilling Co., Dallas, Tex., has abandoned a closely watched wildcat test in Ector County, West Texas. It was the company's No. 1 Johnson, about midway between the Johnson and the Goldsmith fields and in NE Section 30, Block 43, Town-

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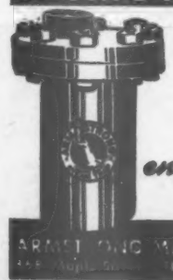

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ship 1s, T.&P. Survey. A core bearing a sulfur odor was recovered from 4,328-35 ft. and the hole was quit at a total depth of 4,430 ft.

GROOVER & ROSE, drilling contractors, and Jones & Stasney, independent operators, all of Albany, Tex., are preparing to start a 3,350-ft. wildcat test 4 miles southwest of Cisco in Eastland County, West Central Texas. The drilling firm is moving in materials for the test, which will be No. 1 C. W. McElreath, SW Section 104. Block 3, H.&T.C. Survey. It will seek production from the McCluskey sand.

COMMERCIAL Drilling Co., Tulsa, opened new territory in a wildcat well drilled for Wynona Oil Co. at No. 1 Jackson, in SW SE NE Section 18-7n-8e, north of production in the Seminole County portion of the Fish pool, Oklahoma. This has been flowing at the rate of 30 bbl. of oil per hour while cleaning out and blowing 1,500 cu. ft. of gas. The well was drilled to a total depth of 4,190 ft. in the Wilcox sand and it is generally predicted that the well will make better than 1,000 bbl. daily when the hole is cleaned. The well may be on a new structure, since there are several dry holes between it and the Fish pool. It is expected that several wells will be started soon in this area.

W. B. HINTON, Lockhart, Tex., drilled a well for F. R. Jackson and others which was shut down at the contract depth of 4,516 ft. at No. 1 Federal Land Bank, in C NW SE Section 29-16n-9e, a wildcat in Attala County, Mississippi. In the old Jackson shallow gas field of Hinds County, Mississippi, two new locations were made. M. Lerew will drill No. 1 Rainey in SE NE Section 14-5n-1e, and J. P. Frame and Harvey Robinson will drill No. 1 Alford, SW SE Section 18-6n-1e.

CLAY Drilling Co. started operations at the No. 1 Bahr, a semiwildcat in CWL SW SE Section 27-18-15w, ¾ mile east of gas production in the Otis-Albert area of Barton County, Kansas.

SUMMIT Drilling Corp., Tulsa, and community associates are drilling No. 1 Griggs, in NW NE NW Section 7-15-5e, in the Kendrick pool, northwest of Stroud, in Lincoln County, Oklahoma. Operators have been bailing the hole to test the Prue sand after a shot with 60 qt. The sand was topped at 3,520 ft. and the hole bottomed at 3,534 ft.

TABOR & COLEMAN, Tulsa, are drilling No. 1 McKinney in C E½ SE SW Section 11-10-4 east of Shawnee, in Pottawatomie County, Oklahoma. Operators are drilling below 5,050 ft. to test the second Wilcox sand.

HELMERICH & PAYNE, Inc., Tulsa, and Blackwell Oil & Gas Co., Cushing, Okla., are drilling No. 1 Fireshaker, in SEC NE Section 11-24-3e, northwest of Ford, in Noble County, Oklahoma, which looked favorable after finding the top of the Mississippi around 3,590 ft., some 33 ft. higher than a diagonal offset which produced 28,000 bbl. of oil from the Wilcox sand before being shut down because of the legal entanglements. The No. 1 Fireshaker is drilling ahead below 3,801 ft.

FAIN Drilling Co., Oklahoma City, Okla., is drilling a deep test in the Anadarko basin at Continental Oil Co.'s No. 1 State-37, in C NE Section 16-8n-16w, southeast of Cordell in Washita County, Oklahoma, which is now drilling below 6,625 ft. in granite wash.

Assembled cutter being screwed on the wash string by hand at a cutting-out job at a deep well

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Eastern Field Report

By STAFF CORRESPONDENT

35 Completions But Results Were of a Routine Character

PITTSBURGH, Pa., May 27.—Operations proved routine in the lower eastern fields during the past week and consisted of 35 completions of which 4 were dry, 18 gas wells, 2 input wells, and 11 oil wells.

Activity continues at a high rate in the shallow sands of Medina County, Ohio, where a water-flooding program is under way. In Section 16, Chatham Township, New York Oil & Gas Co. and others completed No. M6 on the Thomas Brown, Jr., farm at 402 ft. and good for 5 bbl. a day after shot and Nos. 04 and 05 at 402 and 401 ft., respectively, as water-input wells. In Lot 10, Tract 3, the Thornton Producing Co. completed Nos. F9, F10, F17, F18 on Sanford and Watson lease in the Berea grit at 397 ft., 417 ft., 382 ft., 387 ft., respectively, and all are small-output producers. On Lot 10, Tract 15, this company completed a test on the Blake Huffman farm at 500 ft. and it is a small gas well gaging 33,000 cu. ft. a day.

In Athens County, Gross & McCune completed No. 6 Grant Antle in Section 30, Rome Township, in first Cow Run sand at 419 ft. and it is a 1-bbl. pumper.

In Coshocton County, Kundtz Hulse, Inc., completed a failure on the C. E. Rine farm, Section 5, Perry Township, in Clinton sand at 3,291 ft. It was shot and had but a small showing of oil and gas.

In Knox County Gas Producing Co. of Ohio completed a well on the Artie Jones farm, Section 10, Jackson Township, in Clinton sand at 3,171½ ft. It produced 15 bbl. the first day after shot.

In Licking County Wehrle Co., on the Fulton Crawmer farm, west side of Newark City, Newark Township, had Clinton sand at 2,325 ft. and a gas well gaging 950,000 cu. ft. a day. One mile north of Newark City Ohio Fuel Gas Co. on the Harry Phillips farm had Clinton sand at 2,535 ft. and the well gages 400,000 cu. ft. a day.

In Mary Ann Township, Licking County, O. P. Spangler and others completed No. 3 John A. Hughes, Section 6, in Berea sand at 730 ft. It produced 5 bbl. the first day after shot. In Section 2, same Township, Gus T. Shrider and others completed No. 4 I. N. Porter in Berea at 584 ft. It is a gas well gaging 70,000 cu. ft. a day.

In Morgan County Clyde Foraker and others drilled a test on the Andrew Komaromy farm, SE Section 22, York Township, through the Clinton sand to 3,875 ft. It was dry.

In Noble County C. W. Rich and others, on the A. C. Craft farm, Section 30, Seneca Township, drilled through Berea grit and have a gas well gaging 100,000 cu. ft. a day.

SOUTHWEST PENNSYLVANIA

In Kiskiminitas Township, Armstrong County, T. W. Phillips Gas & Oil Co. completed a fair well on the R. M. Burns farm, a test, in the Murraysville sand at 1,354 ft. It is a gas well gaging 1,400,000 cu. ft. a day.

In South Bend Township, Armstrong County, Peoples Natural Gas Co. deepened No. 1 John Coulter from 1,687 ft. to 1,853 ft. and it now gages 168,000 cu. ft. a day. In Cowanshannock Township this company is drilling No. 2 Lee Bell at 1,480 ft.

In Kittanning Township Equitable Gas Co. drilled on the Alice Boyer farm through the Bradford sand to 3,604 ft. and the well was dry. Here this company is setting a rig to deepen No. 1 Ovie Miller, and H. C. Judson and others are drilling No. 1 W. J. Gray at 2,175 ft.

In Boggs Township, Armstrong County, Humphrey, Stone & McCall are down 1,049 ft. in No. 3 R. W. Heffelfinger. In Plum Creek Township William McCollins is building rig for No. 2 Add Reefer. In Red Bank Township John Wray and others are drilling No. 1 O. B. Geist at 1,800 ft. In South Buffalo Township the final gage of W. A. Baker's No. 1 James Bush at 2,943 ft. was only 10,000 cu. ft. a day and it may be deepened to the Bradford sand. In Valley Township John Wray and others are drilling No. 1 H. M. Barker at 1,540 ft.

Indiana-Westmoreland-Clarion

In Center Township, Indiana County, T. W. Phillips Gas & Oil Co. drilled No. 2 R. & P. Coal Co. through the Bradford sand to 3,473 ft. and it was dry. In Young Township this company is drilling No. 1 R. & P. Coal Co. at 2,915 ft; in Washington Township, No. 1 E. B. Brandon at 1,145 ft., and Louisa Black at 1,260 ft.; in Brush Valley Township, No. 1 George Smolar at 2,644 ft.; and in Armstrong Township, No. 1 Mary E. Henderson at 1,315 ft. Here J. C. Rinn is moving in for No. 2 Perdon heirs.

In Westmoreland County Peoples Natural Gas Co. completed deepening and cleaning out No. 1 H. G. Zimmerman in Alleghany Township at 3,587 ft., and after it was tubed it produced 48,000 cu. ft. a day from the Bradford sand. Here this company completed tubing No. 1 R. M. Watson at 3,358 ft. and it is a very small gas well. In Bell Township the Kiski Valley Gas Co. is drilling No. 1 J. F. Wolford at 400 ft.

In Clarion County Owens Illinois Glass Co. is drilling No. 1 Lena C. Longwell, in Monroe Township, at 1,929 ft. In Porter Township Cottage Hill Gas Co. is spudding No. 1 E. M. Reitz.

Fayette-Greene-Washington

In Nicholson Township, Fayette County, Greensboro Gas Co. completed a gas well on the Diamond farm in Nicholson Township at 2,530 ft. with the Fifth sand at 2,315-87 ft. and 150,000 cu. ft. of gas a day at 2,316-19 ft. Here Duquesne Gas Co. is drilling No. 1 I. Cover at 940 ft. In Menallen Township Wahler Powers Oil & Gas Co. is drilling No. 1 Felix Valerio at 2,430 ft. and No. 2 Shamrock Farms Co. at 95 ft. In German Township J. H. Cornell is down 285 ft. in the Marion Kurzankuskie test.

In Greene Township, Greene County, Equitable Gas Co. completed deepening No. 2 Hugh Keenan at 3,037 ft. with the Bayard sand at 2,953-63 ft.; Elizabeth at 3,017-37 ft.; gas gaging 40,000 cu. ft. a day at 2,961 ft., and a total gage of 304,000 cu. ft. a day at 3,035 ft.

In Center Township, Greene County, J. B. Orndoff is starting to drill No. 3 Mattie I. Scott. In Morris Township Hiawatha Oil & Gas Co. is down 1,073 ft. in No. 1 Thomas Young heirs and Romney Rutan and others were drilling at 125 ft. in No. 1 John B. Carter. A. V. Lewis and others were spudding No. 1 Smith and Pethtel in Greene Township.

In Washington County Equitable Gas Co. is drilling No. 1 R. Foster in Amwell Township at 605 ft. In Morris Township Conger and others have a location on the W. E. Archer farm. In South Franklin Township Foley & Williams are drilling No. 1 J. G. Clark at 410 ft.; E. H. and J. B. Tague are rigging up No. 14 Adaline D. McKennan; F. K. Fawcett and others shut down No. 2 Anna Phelan at 125 ft.; A. V. Lewis and others are building rig for No. 3 B. A. Bonham. In Somerset Township Equitable Gas Co. is spudding on the Winnett W. Wright farm. In Amwell Township R. W. Clovis and others are setting a drilling machine for No. 2 W. S. McClennathan. In Blaine Township Washington Oil Co. is drilling No. 1 Vera K. Stine at 570 ft.

In West Deer Township, Allegheny County, Dwight Campbell is drilling on the Sterling heirs farm at 995 ft., and Larkin and others' No. 2 C. H. Curch is at 325 ft. In Middlesex Township, Butler County, Waltman Brothers are drilling No. 1 W. A. Mahan at 150 ft. and Larkin and others' are drilling No. 2 G. Jeuther at 2,430 ft.

Deep Tests

On Chestnut Ridge in North Union Township, Fayette County, New Penn Development Co., William E. Snee, and others drilled No. 1 Piedmont Coal Co. 3 ft. deeper without additional gas. The large gas volume from 7,055 ft. was exhausted and there was an open flow of 2,300,000 cu. ft. a day which was turned in the lines as the gas was needed. It may not be deepened now. In Maryland these operators reached 6,455 ft. in the test on the Humberson farm on the Accident dome in Garrett County. On Laurel Ridge in Stewart Township, Fayette County, same operators and E. G. Mueller are drilling at 7,268 ft. on the Gregg L. Neel farm. On the Piedmond Coal Co. lease in South Union Township, and on Chestnut Ridge, Peoples' Natural Gas Co. is drilling at 2,573 ft.

WEST VIRGINIA

Several oil wells were completed in West Virginia during the week. In Grant district, Pleasants County, Columbian Carbon Co. is completing No. 1 Harry C. Hammett and others in the shales near the Speechley horizon and at 2,230 ft. it is making 20 bbl. a day.

In Lee district, Calhoun County, South Penn Natural Gas Co. completed No. 4 L. G. Garrett at 2,260 ft., the Injun sand, and it is good for 5 bbl. a day. In Sherman district, Calhoun County, Virginian Gasoline & Oil Corp. completed No. 2 Eva D. Hathaway at 2,236 ft., the Injun sand, and it is making 4 bbl. a day.

Gas Wells

In Center district, Calhoun County, W. H. Bickel completed a test on the B. B. Belford farm at 1,882 ft. with the Big lime at 1,657-1,757 ft.; Big Injun, 1,757-1,831 ft., and 168,000 cu. ft. of gas after shot. In Sherman district South Penn Natural Gas Co. completed No. 5 Henry G. Brannon at 2,078 ft., Injun sand, and it has a gas gage of 350,000 cu. ft. a day.

In Clay County the Thompson Gas Co. completed No. T44 Thompson Land & Coal Co. in Pleasant district at 2,041 ft., Injun sand, and it gages 438,000 cu. ft. of gas a day.

In Lincoln County Harvard Gas Co. completed No. 7 Lincoln Mineral & Land Co. in Washington district at 3,685 ft. It is a fair gas well gaging 1,000,000 cu. ft. a day 27 hours after shot.

Oriskany Gas Field

In Poca district, Kanawha County, United Carbon Co. completed No. 825 W. C. Woodall and others at 4,837 ft., with the Oriskany at 4,897-4,935 ft., and a final gage of 4,804,000 cu. ft. a day. This company is setting 7-in. casing in the Corniferous lime at 4,940 ft. The lime was topped at 4,920 ft.

In Poca district the final gage of West Virginia Gas Corp.'s No. 39 Leon Jones was 21,82,000 cu. ft. a day. Here this company has a location on the Samuel H. Fields farm and is drilling No. 038 Elizabeth Thaxton and others at 2,675 ft. Everett Starcher and others made a location on the G. J. Litton and others farm. The final gage of William O. Ziebold's No. 1 Hattie E. Clark was 4,777,000 cu. ft. a day before shot.

United Fuel Gas Co. is drilling No. 4878 J. P. Bailey at 2,375 ft. and No. 4880 Allie Pritt and others at 366 ft.; Columbian Carbon Co.'s No. 1 V. E. King and others at 4,913 ft.; No. 1 Joseph Hughart at 3,985 ft. and No. 1 D. W. Taylor and others at 1,435 ft.

In Elk district, Kanawha County, Linden Drilling Co. has completed No. 2 S. D. Robinson in the Big lime at 1,898 ft. and it has a gas volume of 421,000

(Continued on Page 86)

Oklahoma Operations

By
DAL DALRYMPLE

New Pool Looms in Seminole; Eight Capital Wells in Wilcox

While no completions were reported from the Oklahoma City field in the past week, eight wells were in the Wilcox pay and can all be completed this week if the owners see fit. British American Oil Co.'s No. 2 Military was at a total depth of 6,542 ft. in sand and ready to be shot, and the same company had No. 1 Mary Green in the Wilcox but it is to be drilled deeper for a test of the lower levels. Phillips Petroleum Co.'s No. 8 Stiles was at a total depth of 6,575 ft. and cleaning out and No. 1 Ellison at the corner of Stiles and Thirteenth streets was bottomed at 6,614 ft. and No. 2 Ellison at Lincoln Boulevard and Sixteenth Street was 6,590 ft. deep, and ready to be shot. Phillips Petroleum Co.'s No. 1 Ethel at Geary and Eighth streets was at 6,515 ft. and the same company's No. 1 Holtz at Geary and Fourth streets was at 6,533 ft., cleaning out.

The largest producer of the week in the state was Butcher's No. 1 School land in Section 36-10-4, Pottawatomie County, which produced 960 bbl. of high gravity oil in 24 hours. No wells were completed in the big St. Louis area or in the Cement field in Caddo County where completions rate high in production.

The Winona Oil Co. may be credited with a pool opener north of the Fish field. Its No. 1 Jackson, SW SE NE Section 18-7n-8e, Seminole County, drilled into Wilcox sand to 4,190 ft. on Saturday and was flowing about 30 bbl. per hour with gas at the rate of 1,500,000 cu. ft. per day. It was not completed.

Oklahoma production in April is given as 420,899 bbl. per day by the records of the Corporation Commission, which output exceeded the U. S. Bureau of Mines estimate of demand by only 7,899 bbl. per day. Chief Conservation Officer W. J. Armstrong says this is the fourth time in 13 months that the state has gone over the bureau's estimate. The overage in April came from the unprorated fields as the prorated areas were 12,416 bbl. underproduced.

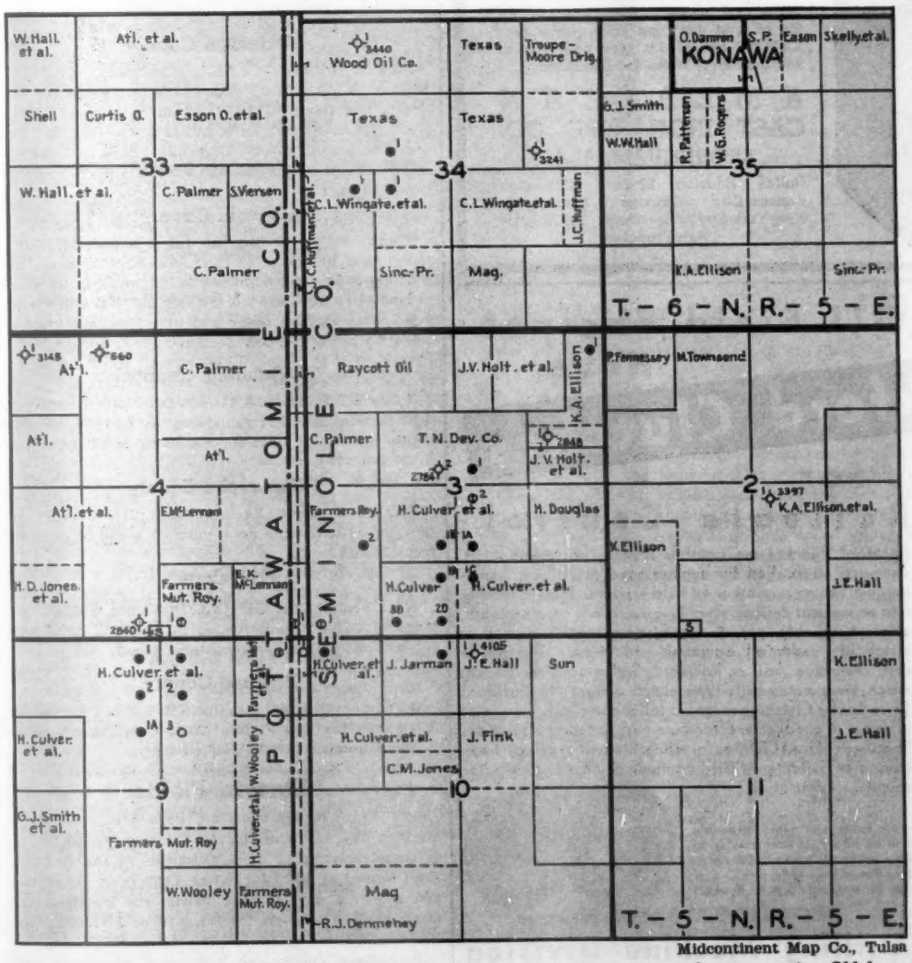
Operators in the new Cumberland area of Marshall and Bryan counties had their first view of high water this week when flood stage was reached in the Washita River.

The discovery well, Pure Oil Co.'s No. 1 Quintin Little-A, in C W½ NE SE Section 28-5s-7e, is near the river's bank. Four wells are drilling in the area, two on the Marshall County side and two in Bryan County.

In Marshall County Pure Oil Co.'s No. 1 Little-B, NE SW SE Section 28-5s-7e, was drilling at 2,840 ft., and No. 1 Thomas-A, SW NE NW Section 28, was at 2,390 ft.; in Bryan County No. 1 Stewart, SW SE NE Section 28, was at 1,075 ft., and No. 1 Park College, SW SW SE Section 27, was at 1,292 ft.

H. G. Marshall and others' No. 2 Pierce, NE NW NE Section 6-10-4, in the Shawnee pool of Pottawatomie County, continued testing and averaged 65 bbl. of oil daily. Earlsboro sand was found at 4,442-99 ft., total depth. Same operators' No. 1 Rodgers, SE SW SW Section 31-11-4, was drilling below 2,646 ft.

In the King sector, southeast of Shawnee, Butcher and Carey completed their No. 1 School land, SE NW NW Section 36-10-4, in Hunton lime at a total depth of 4,300 ft. After perforating and acidizing, the well made 40 bbl. of oil per day. Same operators' No. 1 Taylor, SE NE NE Section 25-10-4, were drilling at 3,060 ft. Fred Ptak's No. 1 Taylor, SE SE SW Section 26-10-4, a west outpost of the field, was drilling below 1,930 ft.



Midcontinent Map Co., Tulsa

The South Konawa pool in Seminole and Pottawatomie counties has been one of the more active Oklahoma pools in recent months. Map shows current development

Estimated Daily Production

Estimated daily production for Oklahoma for the week ended May 25, and for the preceding week was as follows:

	Barrels	
	May 25	May 18
Allen	5,400	5,400
Billings	6,000	6,000
Burbank	7,000	6,825
South Burbank	8,500	8,550
Balance Osage	17,250	16,500
Blackwell district	3,650	3,650
Bristow-Slick	6,000	5,950
Chandler	1,150	1,050
Crescent	2,150	2,100
Cromwell	2,950	2,800
Cushing-Shamrock	9,350	9,200
Duncan	3,725	3,650
Edmond	4,400	4,375
Fish	3,300	3,300
Fitts	16,900	16,600
Jesse	2,300	2,250
Graham-Fox	2,250	2,175
Gray	775	775
Healdton	8,900	8,875
Hewitt	3,900	3,875
Keokuk	3,100	3,100
Konawa	1,150	1,150
Lucien	8,000	7,950
Moore	2,125	2,100
Northeastern counties	17,250	16,900
Oklahoma City	99,600	95,700
Olympic	2,150	2,150
Ramsey	3,800	3,800
Sasakwa	1,550	1,525
Sholem-Alechem	2,850	2,800
Seminole district:		
Bowlegs	6,900	6,850
Carr City	2,350	2,350
Dora	2,150	2,100
Earlsboro	4,250	4,225
South Earlsboro	550	550
East Earlsboro	2,100	2,100
Little River	6,650	6,600
East Little River	675	675
Maud	550	550
Mission	1,275	1,250
Seminole	7,300	7,300
East Seminole	1,150	1,125
Searight	2,125	2,100
Total Seminole	38,025	37,775
St. Louis-Pearson	29,150	29,000
Tatums-Tussy	2,300	2,175
Tonkawa-Garber-Thomas	4,050	4,050
Wewoka	1,750	1,700
Yale-Jennings	3,550	3,400
Other pools	87,325	84,800
Total Oklahoma	423,475	413,975

Southern Oklahoma

Two completions in Carter County were: Batson's No. 1-A Walker, NW SW NE Section 20-4s-2w, which had total depth at 1,889 ft. and pumped 30 bbl. of oil per day.

Gibson's No. 2 Mertens, NW SE Section 20-4s-2w, found the pay zone at 1,833 ft., was bottomed at 1,856 ft., and pumped 38 bbl. of oil in 24 hours. Operators were considering drilling deeper.

In Jefferson County Trout's No. 1-B Trout, SE SW Section 19-6s-5w, had pay sand at 1,567-75 ft., and pumped 50 bbl. of oil daily.

Sun Oil Co.'s No. 1 Hefner, NE SE SW Section 12-

1n-5w, Doyle pool, in Stephens County, was drilling at 3,514 ft., in shale and shells.

George Pace's No. 16 McDonald, SW NE NW Section 28-2s-7w, Stephens County, an old well deepened from 1,004 ft. to sand at 1,702-09 ft., pumped 12 bbl. of oil a day.

Gulf Oil Corp.'s No. 5 Barrett, NE SW SW Section 10-1n-20w, in the Altus area of Jackson County, had granite wash at 1,464-85 ft., pumped 57 bbl. of oil in 24 hours. H. W. Cotner and others' No. 2 Robertson, SE NE SE Section 15-1n-20w, had total depth of 1,370 ft., in granite wash, and pumped 150 bbl. of oil per day.

Gulf Oil Corp.'s No. 1 Owens, NE cor. Section 27-4s-15w, southwest of Grandfield, was drilling below 2,750 ft., in lime.

R. L. Scott and others' No. 1 Scott, a wildcat in SE SW NE Section 28-7s-15, south of Boswell in Choctaw County, was bottomed at 260 ft., and waiting on new machine.

Navajo Oil Co.'s No. 7 Hensely, SW NE NW Section 10-1n-20w, Jackson County, had total depth of 1,634 ft., plugged back to 1,551 ft., was shot, and pumped 6 bbl. of oil in 12 hours, and pumped off.

Batson's No. 1 Williams, SW NE Section 20-4s-2w, Carter County, was a location. Jones' No. 4 Griffin, C N½ NW NW Section 26-4s-2w, a rig.

Wildcat Operations

Tomlinson's No. 1 Bratton, SW NE Section 17-8-10, Hughes County, had Gilcrease at 2,696 ft., Cromwell at 3,189-3,248 ft., total depth, received only a slight showing of oil, and was completed for 4,250,000 cu. ft. of gas daily.

Elm Oil Co.'s No. 1 Evans, SE NE Section 17-10-5, Seminole County, topped Misener at 4,584 ft., Hunton at 4,585 ft., recovered mud on drill-stem test at 4,485 ft., and was dry and abandoned in the second Wilcox at total depth of 4,792 ft.

Norvell & Patterson's No. 1 Isaac, SW NW NE Section 3-4-4, southwest outpost of the Bebee area in Pontotoc County, had Viola lime at 2,699 ft., total depth 3,240 ft., and was dry and abandoned.

McIntyre's No. 1 Richardson, NE SW NW Section 19-10-8, had no shows at 3,558 ft., total depth, and was abandoned.

Kerlyn Oil Co.'s No. 1 Logan, NE cor. Section 26-5-6, west of Francis, was drilling below 1,350 ft.

Cities Service Oil Co.'s No. 1-B State, SE NE SE Section 33-20-4, Payne County, was dry and abandoned in the Wilcox at total depth of 4,130 ft.

R. L. Scott's No. 1 Charity, NW SW Section 13-4s-13w, Cotton County, was drilling at 254 ft. Sandback's No. 1 Statler, NE NE Section 26-5-6, Pontotoc County, was digging cellar and pits. Smith's No. 1 Brown, NE SE NE Section 6-7-4, location. Mid-Continent Petroleum Corp.'s No. 1 Osage, NW NE Section 18-24-5, Pawnee County, was rigging up standard tools. Hurst's No. 1 Croth, SW SW Section 3-4-16w, Kiowa County, was shut down at 125 ft.

Creek County

Tilly Drilling Co.'s No. 3 Wright, NE SW SE Section 17-17-8, found pay sand at 2,323-37 ft., total depth at 2,405 ft., plugged back to 2,337 ft., and pumped 50 bbl. of oil per day.

J. E. Crosbie's No. 2 Mosquito, SE NW NE Section 20-17-9, found Bartlesville sand at 2,548-60 ft., total depth, set 7-in. casing at 2,518 ft., and pumped 53 bbl. of oil in 24 hours.

Moore's No. 3 Mosquito, NE SW NE Section 20-17-9, topped Prue sand at 2,051-75 ft., with a slight showing of oil; found Bartlesville sand at 2,574-82 ft., and pumped 60 bbl. of oil daily.

Martin and others' No. 2 Reading, NW NE NW Section 28-14-10, had the Dutcher sand at 2,793-2,820 ft., and was pumping 100 bbl. of oil a day.

J. E. Crosbie's No. 3 Mosquito, NE NW NE Section 20-17-9, was digging cellar and pits.

Pottawatomie County

Butcher's No. 1 School land, SE NW NW Section 36-10-4, had Hunton at 4,250 ft., total depth 4,294 ft., set 5-in. at 4,294 ft., and flowed 960 bbl. of 41-gravity oil in 24 hours. Dunnett's No. 3 Rodgers, SE NE SW Section 31-11-4, was moving in machinery.

Okfuskee County

Summit Drilling Co.'s No. 2 Hildebrand, NW SE SW Section 18-10-11, found Booch sand at 2,150-54 ft., total depth, and flowed 275 bbl. of oil in 19 hours. Titus' No. 1 Sands, NE SE Section 26-11-8, was digging cellar and pits. Snyder's No. 3 Berryhill, NE SE NW Section 35-11-9, location. Droppleman's No. 1 Dill, SE SE Section 34-12-8, rig.

Lincoln County

Thornton's No. 3 Stewart, SE NW Section 15-13-6, found first Wilcox at 4,248 ft., second Wilcox at 4,261 ft., total depth, and pumped 150 bbl. of oil in 24 hours. Summit Drilling Co.'s No. 2 Clear, SE NE SW Section 6-15-5, was digging cellar and pits. Malernee Oil Co.'s No. 1 Cash, SW NE NW Section 24-17-2, cellar.

Oklahoma County

Sinclair Prairie Oil Co.'s No. 9 Stamper, SW SE NW Section 30-11-2w, found pay at 4,051-75 ft., total depth, set 7-in. at 4,051 ft., and swabbed 181 bbl. of oil in 24 hours.

Comanche County

Smith and others' No. 8-A Truitt, NW SW SE Section 26-2-11w, Lawton area, pumped 4 bbl. of oil a day from 225 ft.

Kay County

West Virginia Oil Co.'s No. 16 Wentz, SW SE NW Section 17-28-1, was deepened to 4,367 ft., from 3,275 ft., without a show, and was abandoned.

Pawnee County

D. W. Sample's No. 1 Bellis, NW SW NE Section 28-20n-9, had the Red Fork at 2,048-90 ft., shot with 60 qt., and pumped 200 bbl. of oil daily.

Eastern Fields

(Continued from Page 84)

cu. ft. a day. In Union district Cameron Producing Co. is completing No. 1 J. S. Casdorph in the Oriskany sand topped at 4,976 ft. and at 4,988 ft. it gaged 100,000 cu. ft. a day. In this district the Hamilton Gas Corp. made a location for No. A19 A. V. Mullins and Richard Shelton.

In Jackson County Joe Rubin and others are drilling the wildcat on the C. E. Andricks farm in Grant district at 2,628 ft.

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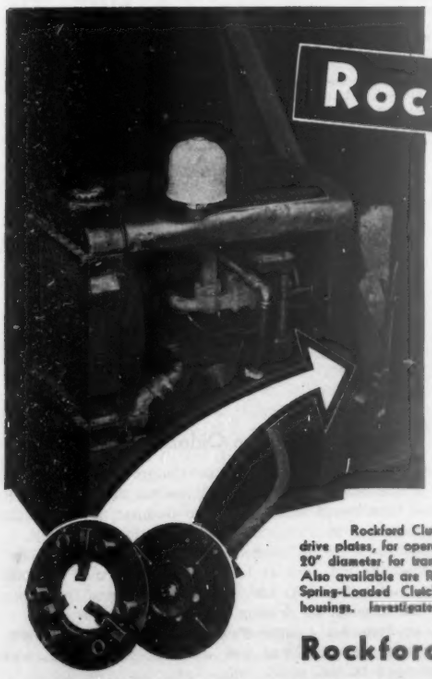

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North Louisiana, Arkansas

By
GEORGE WEBER

Wildcat in Vivian District Is Slow in Showing Results

SHREVEPORT, La., May 27.—A Vivian wildcat in Caddo Parish which has attracted attention for several weeks with a shallow oil show was tested during the past week with no results as yet. Miller County, Arkansas, wildcatting also claimed attention. The Olla field of La Salle Parish, Louisiana, was further extended and a new oil well completed in the Cotton Valley field. Drilling activity, in both field and wildcat locations continues slow throughout the tri-state area.

Caddo Test

D. T. Cauble's No. 1 Darnell, Section 17-22-16, showed disappointing results on its first test, and further testing is under way. Several weeks ago the drill penetrated sand at 3,002-10 ft. and 3,012-52 ft. which showed oil and indicated good production possibilities on an electrical log. Operators set casing and shut down at 3,204 ft. for several days to clear titles and late in the past week began testing.

Casing was first perforated at 3,086-92 ft. with 36 shots, and the well was swabbed without any show. Operators reperforated at 3,085-92 ft. and were testing at last report. The wildcat is near the Texas State line northwest of the Vivian extension area which saw considerable development several months ago.

Olla

The recently opened Olla field of La Salle Parish, Louisiana, was extended one location south by Placid Oil Co.'s No. 14 Louisiana Central. The field continues the most active new development in the district. Production is from sand in the Tertiary Wilcox formation, deeper than previous production in that formation.

NORTH LOUISIANA COMPLETIONS

Caddo—Caddo Parish

J. W. Bailey's No. 1 Arkansas Fuel, Section 1-20-16, pumping 100 bbl., acidized with 4,000 gal., total depth 1,530 ft. Magnolia Petroleum Co.'s No. 21 Dean-Thigpen, Section 6-20-15, pumping 65 bbl. oil and 25 bbl. salt water, total depth 1,520 ft. Bobby Manziel's No. 2-B Muslow, Section 6-20-15, pumping 30 bbl. acidized with 4,000 gal., total depth 1,535 ft. R. L. Milam's No. 1 Bickham, Section 28-21-15, pumping 10 bbl. oil and 30 bbl. salt water, acidized with 4,000 gal., total depth 1,562 ft. Southern Oil & Gas Co.'s No. 3 Muslow, Section 5-20-15, pumping 35 bbl., acidized with 4,000 gal., total depth 1,524 ft. John W. Wall's No. 1 fee, Section 12-20-16, 15 bbl., total depth 1,519 ft.

Wildcat—Caddo Parish

J. M. Conner's No. 1 Williams, C NW NW Section 14-15-15, total depth 5,350 ft., dry and abandoned.

Olla—La Salle Parish

Placid Oil Co.'s No. 14 Louisiana Central, C SE SE Section 13-10-2, 216 bbl., ¼-in. choke, tubing pressure 180 lb., casing pressure 320 lb, perforated at 2,225-30 ft., old total depth 2,415 ft. Arkansas Fuel Oil Co. and Placid Oil Co.'s No. 2 Goodpine, C SW NW Section 18-10-3, 165 bbl., ¼-in. choke, 8 per cent sediment and salt water, tubing pressure 150 lb., casing pressure 245 lb., perforated casing 2,255-60 ft., old total depth 2,430 ft.

Wildcat—Sabine Parish

J. E. Watts' No. 1 Patterson, 660 ft. from SE cor. of NE Section 33-10-11, dry and abandoned 3,502 ft.

Cotton Valley—Webster Parish

Midstates Oil Corp.'s No. 1 Brenner-Beamsley unit, 100 ft. SE of C SW SE Section 20-21-10, 432 bbl., ¼-in. choke, tubing pressure 850 lb., casing pressure 1,700 lb., total depth 8,624 ft.

Production by Pool

Estimated daily gross production all companies week ended May 24:

NORTH LOUISIANA

	Barrels
Bellevue	475
Caddo light	5,240
Caddo heavy	2,120
Converse	545
Cotton Valley	*15,515
Cross Lake	4,615
De Soto and Red River	1,045
Elm Grove	275
Haynesville	2,775
Holly	65
Homer	2,880
Lisbon	4,550
Olla	1,360
Pleasant Hill	90
Rodessa	20,245
Sarepta-Carterville	†355
Sligo	2,210
Sugar Creek	675
Urania	2,850
Zwolle	1,880
Total North Louisiana	69,765

SOUTH ARKANSAS

Atlanta	1,910
Big Creek	70
Buckner	2,490
Champagnolle	1,150
Dorcheat	925
El Dorado	1,670
Lewisville	940
Lisbon	245
Magnolia	20,000
Miller County	280
Nevada	560
Nick Springs	770
Rodessa	2,310
Schuler	18,690
Smackover light	1,775
Smackover heavy	13,860
Stephens	535
Troy	1,260
Urbana	925
Village	1,190
Total South Arkansas	71,555

Rodesa, Texas, 20,800 bbl.

*4,320 bbl. is distillate. †85 bbl. is distillate.

Arkansas Developments

In Miller County, Standard Oil Co. of Louisiana's No. 1 Sturgis, having cored and drilled 358 ft. of what is termed the Buckner formation, topped the Smackover lime late in the week at 9,306 ft. in an oolitic-lime section. Smackover lime was previously believed topped at 8,965 ft., but continued sections of red shale anhydrite and small amounts of lime were encountered below that level, showing it to be still Buckner formation. A test of the Reynolds member, a porous oolitic section in the top of the Smackover lime, is anticipated with considerable interest. The wildcat had commercial production in the Paluxy formation and if unsuccessful in finding oil in the Smackover will be plugged back to complete as a shallow-field discovery. Late in the week, Red Iron Drilling Co.'s No. 1 Philyaw, nearly 2 miles southeast of Standard's No. 1 Sturgis, was reported to have missed the pay in the Paluxy. K. E. Jennings and J. J. Oil Co.'s No. 1 H. T. Wood in Section 33-18-28 is drilling for the Rodessa section in the lower Glen Rose formation.

In Lafayette County Atlantic Refining Co.'s No. 1 Bodcaw Lumber Co., a wildcat in Section 29-17-23, is drilling in red sandy shale below 8,640 ft. and is expected to encounter the Buckner within a few days.

ARKANSAS COMPLETIONS

Magnolia—Columbia County

Standard Oil Co. of Louisiana's No. 2-B Longino, Section 19-17-19, 840 bbl., ¼-in. choke, tubing pressure 750 lb., casing pressure 1,200 lb., set 6-in. casing 7,531 ft., total depth 7,551 ft.

EAST TEXAS BORDER COMPLETIONS

Smithland—Marion County

Texas Canadian Oil Co.'s No. 1 W. Mackey, 282 ft. south, 2,800 ft. west of NE cor. L. Needham Survey, pumping 12 bbl., total depth 2,387 ft.

Kentucky Fields

(Continued from Page 68)

and is drilling at 1,310 ft., in sand, in No. 5266 Henry Watson, in the same locality.

In Floyd County Kentucky-West Virginia Gas Co. was drilling at 1,973 ft., in No. 586 Levi Mitchell, on Mitchell Branch of Mud Creek, and was down 2,160 ft., in Berea grit, on the John Campbell land in the same vicinity. Same company had reached 1,240 ft. in No. 592 John Wicker, with drilling continuing in Salt sand, and is rigging up No. 593 Mary and J. B. Adams, in the same locality.

Kentucky-West Virginia Gas Co. is setting machine at No. 595 Floyd Hall, and drilling at 1,603 ft., in Maxon sand, in No. 5262 W. R. Hall, on Johns Fork of Left Beaver, and is down 808 ft., in Salt sand, in No. 5263 J. P. Sturgill, nearby. The same concern is down 1,035 ft., in Salt sand, in No. 5267 Monroe Bolen, on Long Branch of Jones Fork, and is rigging up No. 5268 John Burchett, on Cow Creek, and is down 185 ft., in slate, in No. 5269, Jeff Jervis (John Crider), on Home Branch.

In Magoffin County C. J. Sipple & Co. was drilling below 100 ft. in No. 9 William Salyer, in Burning Fork district. The well is on Birch Branch.

WESTERN KENTUCKY

OWENSBORO, Ky., May 27.—Three new oil wells, two dry holes and one drilling well abandoned for reasons not learned, together with eleven new operations formed the record of the week in western Kentucky.

In Ballard County, 1½ miles northwest of Bandana: J. R. Todd and others' No. 1 Rudd, spudding in.

Butler County, Silver City district: Porter Evans & Baldwin's No. 1 Helsey & Moore, moving in.

Daviess County, Whitesville district: White & Vickers' No. 6 M. J. Holbrook, drilling at 670 ft. Utica district: Borders & Schaffer's No. 2 William and J. E. Johnson, location. Glenville district: A. Teller, trustee's No. 3 E. F. Lebold, east tract, drilling at 310 ft.

Hancock County, Cloversport district: Rev. Hunger, trustee's No. 3 Lee Campbell, location. John Richards and others' No. 5 Margaret McGavock, 25 bbl. of oil and 10 bbl. of water in 24 hours from McClosky lime acidized with 500 gal. at 493-500 ft.

McLean County, South Livermore district: M. L. Swartzburg and others' No. 1 R. L. Davis, dry hole, total depth 1,806 ft.

Ohio County, Taffy district: E. DeHart's No. 7 Bartlett heirs, 40-bbl. well in stray sand at 437-58 ft., total depth 474 ft. Adaburg district: Dr. G. W. Hardie's No. 7 Nannie Bean, estimated at 10 bbl., Jett sand, total depth 596 ft.; No. 8 Bean, drilling at 510 ft. Buford district: Rex Pyramid Oil Co.'s No. 3 Walter Blair, spudding in. Fordsville district: Henry Scholl and others' No. 3 C. E. Boyd, spudding in. Oaks district: Ed Day and others' No. 3 E. S. Lane heirs, drilling at 80 ft. R. S. & G. Oil Co.'s No. 8 Charles Downs, abandoned at 200 ft. Narrows district: Dr. F. D. Clark estate's No. 1 O. D. Fentress, dry hole at 540 ft. Pleasant Grove Church district: Schaffer & Mays' No. 10 A. R. Renfro, drilling at 150 ft.

Rocky Mountain Area

By
T. R. INGRAM

Good Wells in Northern Area With Starting of Spring Work

DENVER, Colo., May 27.—General Petroleum Corp.'s No. 1-21-G, the discovery well in the Shannon sand in the Cole Creek field in Wyoming, averaged 350 bbl. per day on a 10-day test. Yale Petroleum Co.'s No. 2-A Frisby, in the Oregon Basin field, made 75 bbl. an hour initially, after acidizing. The La Barge field in Sublette County, had two completions better than the average, both being in a second sand, Marvel Oil Co.'s No. 1-H Government making 315 bbl. a day, and Texas Co.'s No. 1-E 165 bbl. in the first 32 hours. The Osage field in Weston County had one completion, a 12-bbl. well.

The Santa Rita Oil & Gas Co.'s No. 5 Lander, in the Lander pool on the west side of Cut Bank, swabbed 320 bbl. the first 24 hours from the Sunburst. A. Kately's No. 1 Kramer made 4 bbl. and is shut down for orders. The Helmac Trust's No. 3 Government swabbed 132 bbl. the first 24 hours. Kevin-Sunburst had two completions, both small wells.

Pure Oil Co. is preparing to drill a deep test 7 miles south of the Baca County, Colorado, line on a block of 68,000 acres.

Ohio Oil Co.'s No. 1 Coughlin is preparing to test the Sundance sand in the Rex Lake field, Albany County, Wyoming.

New operations included two in Lance Creek, one in La Barge, one in the Cut Bank field, and three in Kevin-Sunburst. Wildcats include one on the Signal Butte structure to 3,800 ft., near the Canadian line.

NEW MEXICO

Leading the activity from the Southeast New Mexico district was the announcement of a drilling campaign by Leo R. Manning and associates for their acreage in the Manning area opened several months ago southeast of the main body of the Loco Hills field in Eddy County.

The operator has signed a drilling contract with Brewer Drilling Co. of Artesia for development of 15 tracts of 40 acres each. The tracts were farmed out to the drilling company for development, Manning to retain a small overriding interest until the wells are paid for at which time the producers will be operated on a 50-50 basis.

The tracts involved in the deal are the N½ N½, the SE and the E½ SW Section 21-18s-30e; the SW NW and the W½ SW Section 22-18s-30e. Manning and associates have announced only the location of their No. 2 McClay, offset to the No. 1 McClay which opened the area.

A semiwildcat test north of the Grayburg field in Eddy County was announced by Talmadge and others as their No. 1 State, located in SE NE Section 24-16s-28e.

Eddy County

Sanders Bros.' No. 1 De Temple, NW NW Sec. 27-19-31. Loc.
Bassett & Birney's No. 1 Platt, SW cor. Sec. 26-18-26. Old failure being D.D. below 2,342 ft.; drlg. 2,410 ft.
Max Weathers' No. 1 Flood, SE SE Sec. 24-18-23. Drlg. 1,090 ft.
M. Yates, Jr.'s No. 1 McCall, SW SW Sec. 24-18-26. Drlg. 450 ft.
Jack Harris' No. 1 Josey, SW SE Sec. 19-20-23. S.D.O. 235 ft.
Schumacker's No. 1 Levers, NE NE Sec. 33-16-29. Drlg. 788 ft.
J. B. Mulcock's No. 1 Etz, 660 ft. from S and W lines, Sec. 25-16-30. Drlg. 1,210 ft.
Everts' No. 1 Greer, SE cor. Sec. 31-16-31. P.B. 3,690 ft.; swb. 5 B.O.P.D. for 7 days; tstg.; S.D.O.
Everts & Moran's No. 1 Ranuz, NE NW Sec. 18-23-26. T.D. 375 ft.; S.D.; no report.
J. B. Cowden's No. 1 State, SW SE Sec. 3-17-29, between Root field and High Lonesome field. R.U. mach.
G. A. Grober's No. 1 Wright, 1,080 ft. from N and W lines, Sec. 25-18-28. S.O.&G. 1,382 ft.; est. 10 B.O. P.D.; fsg. 2,226 ft.
G. M. Cone's No. 1 Hare, NW NW NE Sec. 14-16-28, 3 mi. W of High Lonesome field. Drlg. 1,525 ft.
Artesia Drlg. Co.'s No. 1 Hoffman, SE SE SE Sec. 14-17-24. Est. 1,250,000 cu. ft. gas at 938 ft.; S.D.R. 1,095 ft.
L. E. Elliott's No. 1 Elliott, SE SE SE Sec. 24-17-29. S.S.O. 3,255-75 ft.; made 1 B.O. and 4 B.W. in 24 hrs.; drlg. 3,830 ft.
Anderson's No. 1 Neeson, 330 ft. from W and 2,310 ft. from N lines, Sec. 4-16-30. S.D.O. 2,925 ft.
Frederick's No. 1 Reed, 1,980 ft. from S and W lines, Sec. 28-24-28. O.W.D.D.; top gas sand 2,891 ft.; est. 2,000,000 cu. ft. gas; casing set at 2,873 ft. and collapsed at 2,200 ft.; prep. rerun csg.
Wilder's No. 1 Young, 1,650 ft. from N and W lines, Sec. 23-16-29. S.G. 1,805 ft.; S.D.O. 3,095 ft.
Sam Montgomery's No. 1 Kaltenbach, 330 ft. from N and W lines, Sec. 24-16-27. S.D.O. 2,243 ft.
Thomas & Bowers' No. 1 H. W. Etz, 2,310 ft. from N and 330 ft. from W lines, Sec. 13-16-30. T.D. 3,744 ft.; 2,000 ft. F.I.H.

Dona Ana County

Picacho O. & G. Co.'s No. 12 Armstrong, Sec. 15-23s-1w. S.D.O. 2,620 ft.
Slack & Mahres' No. 1 Simmons, Sec. 35-22s-5e. T.D. 2,785 ft.; S.D.O.

Chaves County

Farrar-Jones-Cunningham's No. 1 Samples, 330 ft. from S and E lines, Sec. 1-7-27. S.D.R. 98 ft.

Luna County

O. D. Berry's No. 2 Berry, Sec. 33-22-10. S.D.R. 291 ft.

Lea County

Gulf Oil Corp.'s No. 1 Amanda E. Drinkard, NW SE Sec. 25-22-37, in Skelly area, 5,000-ft. test. W.O.C. 7-in. csg. 3,476 ft.
J. D. Barefield's No. 2 Stroup, 1,980 ft. from N and E lines, Sec. 12-18-32. S.D.O. 4,055 ft.; S.S.O. 4,040-50 ft.; 1 bailer oil after 2-day shutin.
Stogner & Weiner's No. 1 State, SE SE Sec. 30-12-32. Drlg. 1,330 ft.
Stanley & Weiner's No. 1 Saunders, NE NE Sec. 20-21-38. R.U.R.

Otero County

Ernest's No. 1 Ernest, Sec. 20-25-7. Drlg. 3,200 ft.
Otero Oil Co.'s No. 1 State, SE NW Sec. 5-22-10. S.D.O. 825 ft.

Socorro County

Joiner Oil Corp.'s No. 1 Belen grant, 2,310 ft. N and W lines, Sec. 16-3-1. S.D.O. 845 ft.

SOUTHEAST NEW MEXICO COMPLETIONS

Eddy County

In the High Lonesome field Stout-Waddell's No. 1 Iles, NE SW Section 17-16-29, 1,755-1,812 ft., 20 bbl. daily, pumping after shot.

In the Shugart field Green Bay Oil Co.'s No. 3-A Paton-Irwin, NE SW Section 9-18-31, plugged and abandoned at 3,904 ft. Schermerhorn-Winton & Co.'s No. 1-B Ginsberg, NE SW Section 18-18-31, 3,540-65 ft., plugged back from 3,714 ft., 15 bbl. daily, pumping after shot.

In the Jackson field N. W. & B.'s No. 12-A Jackson, SE SE Section 12-17-30, 2,972-3,482 ft., 115 bbl. daily through open tubing after acid.

In the Leonard field Barnsdall Oil Co.'s No. 1-B Dodd, NE NE Section 14-17-29, 2,518-52 ft., 76 bbl. daily through ¾-in. choke.

Lea County

In the Maljamar field R. W. Fair's No. 5-B Baish, NE SE Section 22-17-32, 3,795-4,055 ft., 700 bbl. daily through open casing after shot. Barney Cockburn's No. 8-B Baish, NE SE Section 27-17-32, 3,778-4,053 ft., 524 bbl. daily through open casing after shot.

In the Eunice field Cities Service Oil Co.'s No. 2-M State, NW SW Section 36-21-36, 3,755-3,852 ft., 148 bbl. in 4 hours through ¾-in. choke, naturally.

In the South Eunice field Cities Service Oil Co.'s No. 7-AA Closson, SE SW Section 18-22-36, 3,720-3,825 ft., 345 bbl. in 10 hours through 1-in. choke after acid.

In the Penrose field J. C. Clower's No. 5-B Christman, SW SW Section 28-22-37, 3,545-3,680 ft., 60 bbl. daily flowing through open tubing after shot.

In the Skelly field Lem Peters' No. 4-H State, NE SE Section 34-22-37, 3,615-80 ft., 100 bbl. daily flowing through open tubing after shot.

In the Langlie field Leonard Oil Co.'s No. 1 Bates, NW SW Section 20-25-37, 3,083-3,361 ft., 2,000,000 cu. ft. gas (old well drilled deeper).

In the Vacuum field Magnolia Petroleum Co.'s No. 60 State-Bridges, SE NE Section 14-17-34, 4,468-4,660 ft., 253 bbl. in 12 hours through open tubing after shot. Magnolia Petroleum Co.'s No. 62 State-Bridges, SW SW Section 14-17-34, 4,634-4,700 ft., 509 bbl. daily flowing through open tubing after shot. Westmount Oil Co.'s No. 2-B State, NE NW Section 30-17-35, 4,535-4,724 ft., 312 bbl. daily flowing through ¾-in. choke on tubing, naturally.

NORTHWEST NEW MEXICO

Bernalillo County

Norins Realty Co., Inc.'s No. 2 North Albuquerque, NE SE NW Sec. 19-11n-4e. S.D.O. 5,024 ft.; cont. depth.
Norins Realty Co., Inc.'s No. 2 Pajarito, Sec. 22-9n-1e. S.D. 2,000 ft.

McKinley County

Petroleum Products Corp.'s No. 7 Hospah, C SW SW Sec. 36-18n-9w. Spd. to 50 ft.; S.D.
Teague, Greer et al's No. 1 Santa Fe, Sec. 35-18n-10w. Drlg. 550 ft.; (first report; Seven Lakes dist.).

San Juan County

Continental Oil Co.'s No. 106 Rattlesnake, SW SE SE Sec. 12-29n-19w. Drlg. 460 ft.; (first report).
Claude Carroll's No. 1 Cornell, C SE NE Sec. 11-29n-12w. T.D. 750 ft.; fsg.
Kutz Deep Test, Inc.'s No. 1 Govt., C NW NW Sec. 28-28n-10w. Drlg. 1,215 ft.
Continental Oil Co.'s No. 100 Rattlesnake, SE NW NE Sec. 2-29n-19w. S.D.O. 7,407 ft.

Socorro County

Joiner Oil Corp.'s No. 1 Belen Grant, SE NW Sec. 10-3n-1e. Drlg. 850 ft.

Valencia County

C. A. Grober et al's No. 1 Fuqua, NE NE Sec. 19-5-3e. T.D. 3,850 ft.; C.O. 200 ft. off bttm.

COLORADO

An important wildcat of special interest to southeastern Colorado is to be drilled 7 miles south of the Baca County line in the Oklahoma Panhandle in Cimarron County by the Pure Oil Co. on the Germyn tract. Location probably will be in Section 19-5n-8e. The company has assembled a block of 68,000 acres after doing extensive geological work. Baca County is in the southeastern corner of Colorado and west of the Hugoton field in Kansas.

Custer County

Henry Donnelly's No. 1 Hodges, SE NE Sec. 26-21s-69w. Dpnd. to 1,662 ft.; S.D. for csg.

El Paso County

F. F. Hintze et al's No. 1 State, CSL SE SE Sec. 16-11s-66w. T.D. 1,290 ft.; drlg. and U.R. 8¼-in.

Fremont County

John Lipps' No. 1 fee, C.T. in south Florence on farm out from Continental Oil Co., C SW SW Sec. 11-19s-70w. Loc.

Huerfano County

Ira E. Miller et al's No. 3 Hamilton, SE SE NW Sec. 20-29s-67w. T.D. 1,365 ft.; R.U. to res.
I. E. Siderman-White et al's No. 1 Martinez, C SW NE Sec. 33-26n-67w. Drlg. below 1,400 ft.

Jackson County

W. N. W. Corp.'s No. 1 North Park Coal, NW NW Sec. 18-9n-78w. T.D. 4,350 ft.; U.R. 8¼-in. for W.S.O.

La Plata County

Nick Spatter's No. 1-X Bryce, C SW SW Sec. 31-33n-9w. Drlg. 3,900 ft.

Larimer County

Continental Oil Co.'s No. 1 Whitaker-Blunck, NE NE NW Sec. 30-8n-68w. T.D. 4,504 ft.; prep. to D.D.
Ed Shogren et al's No. 1 Frazier, SE Sec. 31-4n-69w S.D. 910 ft.; to change over to C.T.

Logan County

West Plains Oil Co.'s No. 1 Sheldon, SE NW SW Sec. 3-10-55w. T.D. 1,512 ft. (C.D.); installed new engine.

Moffat County

Mountain Fuel Supply Co.'s No. 2-A Kuykendall, SW NW SW Sec. 23-12n-100w. M.I.M.
Mountain Fuel Supply Co.'s No. 6 Wilson, C Lot 2, SE Sec. 14-12n-100w. Loc.
Mountain Fuel Supply Co.'s No. 5 Wilson, SW SW NW Sec. 23-12n-100w. Recmtd. 7-in. on bttm. at 2,532 ft.
Great Divide Pet. Co.'s No. 1 Wyatt, SE Sec. 4-6n-92w. T.D. 724 ft.; res. C.O.; 10-in. frozen at 650 ft.

Montezuma County

McElmo Oil Co.'s No. 1 West, NE NW NE Sec. 31-36n-17w. S.D. 5,285 ft.

Ouray County

Ridgway Pet. Synd.'s No. 1 Bennett, C NE SE Sec. 2-45n-8w. Drlg. below 400 ft.

Park County

South Park Oil Co.'s No. 1 Leman, NE NE SE Sec. 34-11s-75w. T.D. 7,246 ft.; cmtd. caves; drlg. plug.

Rio Blanco County

W. L. W. Royalty Corp.'s No. 1 Rector, SE Sec. 34-2n-102w. Drlg. 740 ft.
Texas Co.-California Co.'s No. 3 Unit, NE NE NE Sec. 27-3n-94w. Drlg. 5,005 ft.

Routt County

L. C. Craig-E. L. Moore's No. 1-X Erwin, C SW NE Sec. 33-7n-85w. T.D. 2,253 ft.; W.O. csg.

Washington County

Thurman Oil Tr.'s No. 1 Ruby, NW NW SW Sec. 3-5s-52w. S.D. 1,800 ft. in sd.; M.I. heavier rig.

WYOMING

Albany County

The Ohio Oil Co.'s No. 1 Coughlin, on the Rex Lake structure, 10 miles southwest of the Quealy field, an old well completed in the Dakota sand a number of years ago, is to be deepened to the Sundance. It is the first test of that horizon to be drilled in this field which has three oil wells and one gas well in upper horizons. In 1937 the company's No. 4 Coughlin, SW NE SW Section 26-16n-77w, was completed for 55,000,000 cu. ft. of gas at 1,618 ft. The lowest horizon tested was the Lakota at 3,930 ft. in No. 1 Coughlin, which is to be deepened.

Ohio Oil Co.'s No. 1 Coughlin, SW NE NW Sec. 26-16n-77w. T.D. 3,936 ft.; pulling tbg. to D.D.

Big Horn County

McDonald & Curtis' No. 1 Orchard, SE NW Sec. 24-51n-93w. Spd. and S.D. to comp. R.U.
Frank S. Scott's No. 1 Robertson, SE SE SE Sec. 6-54n-93w. S.D. 650 ft.; indef.

Carbon County

Sinclair-Wyoming Oil Co.'s No. 14 Unit, NW SW NE Sec. 7-26n-89w. Drlg. 2,305 ft.
MacKinnie Oil & Drlg. Co.'s No. 2 Union Pacific, NE SE NE Sec. 21-22n-78w. Drlg. 368 ft.
Albert Dev. Synd.'s No. 1 Boeke, SW NW Sec. 18-25n-79w. Drlg. 969 ft.
Ohio Oil Co.'s No. 12 State, CWL NE Sec. 34-20n-78w. Loc.
Tri-State O. & R. Co.'s No. 17, NW SE NW Sec. 20-21n-80w. Drlg. 610 ft.

Converse County

Shawnee Expl. Co.'s No. 1 Salisbury, SE SW NE Sec. 27-32n-6w. Rdy. to spd.

Crook County

Union Oil Co. of Calif.'s No. 1 Casey, SE NE NW Sec. 3-57n-62w. B.R.
Vickers Pet. Co.-Continental Oil Co.'s No. 1 Duncan-Lobban, NE NW SW Sec. 28-57n-64w. M.I.M.

Fremont County

The first oil to be shipped to market from the Maverick Springs field is now moving by truck from the field to Ogden, Utah. It is not large in quantity, approximately 100 bbl. per day, but marks the first commercial movement from a district estimated capable of producing 7,000 to 8,000 bbl. daily from wells which have been shut in for many years. Lloyd Pratt obtained a lease last January on a tract in Section 27-6n-2w, upon which the Maverick Drilling Co. drilled three wells 12 years ago. The lease held by the original operator had expired.

Ohio Oil Co., Texas Co., Continental Oil Co., and Stanolind Oil & Gas Co. are among the companies which had leases in the field. Some of these began to expire last year and the Wind River Indian Council wanted them cancelled or produced so they could obtain some revenue from them. Extensive hearings were heard on the companies' applications for renewal but the Department of the Interior has not published any decision in the matter. Several years ago the Indians protested and the Continental Oil Co. developed some plans for building a pipe line part of the way from the field if the Burlington or Chicago & Northwestern would build a spur to meet it, but a compromise was reached whereby rentals on the leases were increased.

Logue Trust Co.'s No. 1 Wisner, Government Draw dist., NE SW Sec. 8-33n-98w. Spdg. 10 ft. in Cody sh.
Sinclair-Wyoming Oil Co.'s No. 12 Unit, SW SE NW Sec. 23-32n-95w. Drlg. 965 ft.
Tropic Oil Co.'s No. 1 Govt., C SE SW Sec. 34-27n-90w. T.D. 3,495 ft.; cmtd. off tools after sdtrkg.

Natrona County

General Petroleum Corp.'s No. 1-21-G, NW NW NW Section 21-35n-77w, was listed as a completion following a 10-day test in which it averaged 350 bbl. per day. It is producing from the Shannon sand through the casing perforated at 4,530-70 ft.
Lewis Gebhart's No. 1 Govt., NW NE SE Sec. 10-39n-78w. Drlg. 465 ft.
Continental Oil Co.'s No. 1 McGrath, C NW SW Sec. 15-34n-78w. Drlg. Tensleep 8,077 ft.; T. 8,036 ft.; sd. hd. and tight.
Royal Oil Corp.'s No. 1, SW SW SW Sec. 26-35n-80w. Drlg. 205 ft.
Connelly Drlg. Co.'s No. 1 State, SW SW NW Sec. 36-36n-81w. S.D. 1,420 ft.

Hot Springs County

Boybell Oil Co.'s No. 2 Kyne, NW SE SW Sec. 22-43n-92w. Drlg. 623 ft. in Front.; 6⅝-in. csg. at 523 ft.

Lincoln County

H. C. Harris et al's No. 1 Govt., SE NW NW Sec. 23-21n-117w. Drlg. L. 2,939 ft.
Fontenelle Dev. Co.'s No. 1 Pomroy, NE SW Sec. 5-24n-113w. Drlg. 900 ft.; cmtd. 10-in. at 765 ft.; wtr sd. at 850 ft.

Niobrara County

Lance Creek had two new operations. There were no completions. A near completion is the Continental Oil Co.'s No. 7-Dielman, SE SE NE Section 7-35n-65w, which swabbed 32 bbl. an hour the first 15 hours at 5,446 ft., total depth, from the Leo sand topped at 5,430 ft. It is still testing.

Minnelusa Oil Corp. and MacKinnie Oil & Drlg. Co.'s No. 11 Thompson, NW SE NW Sec. 7-35n-65w. Cmtd. 13⅜-in. at 321 ft.; W.O.C.; (first report).
Ohio Oil Co.'s No. 7 Agness Rohlff, NW NE SE Sec. 32-36n-65w. R.U.R.; (first report).
A. B. Cobb's No. 1 Novick, SE NE NW Sec. 6-35n-65w. Drlg. 1,930 ft.
Continental Oil Co.'s No. 7-A Dielman, NW NE NW Sec. 8-35n-65w. Rig; W.O. equip.
Continental Oil Co.'s No. 19 Tom Bell, NW NE SE Sec. 33-36n-65w. Rig; W.O. equip.
Argo Oil Co.'s No. 13-A Elliott, SE NE NW Sec. 5-35n-65w. Rig; W.O. equip.
Ohio Oil Co.'s No. 16 Lamb-1, NW NE NE Sec. 5-35n-65w. Drk.; rig; W.O. equip.
Continental Oil Co.'s No. 7 Sam Joss, NW SW NE Sec. 6-35n-65w. Drlg. 2,267 ft.
Continental Oil Co.'s No. 11 Otto Rohlff, SE NE SE Sec. 31-36n-65w. Drlg. 2,378 ft.
Ohio Oil Co.'s No. 14 E. Lamb-Acct. 2, C SW SE Sec. 5-35n-65w. Drlg. 4,733 ft.; T. r.b. 4,290 ft.
Continental Oil Co.'s No. 3 E. Rohlff, SE SW NW Sec. 32-36n-65w. Drlg. 4,013 ft.
Continental Oil Co.'s No. 7-B Dielman, SE SE NE Sec. 7-35n-65w. T.D. 5,446 ft.; tstg.
Ohio Oil Co.'s No. 16 Putnam, SW SW NW Sec. 4-35n-65w. T.D. 5,526 ft.; sat. sd. 5,386-65 ft. and 5,498-5,512 ft.; cmtd. 7-in. at 5,470 ft.; W.O.C.
Ohio Oil Co.'s No. 15 Carrie Putnam, NW NE SW Sec. 33-36n-65w. T.D. 5,541 ft. in sat. sd.; tstg.
H. D. Moore's No. 1 Berggren, SE NW Sec. 23-35n-63w. T.D. 2,526 ft.; rng. 4¾-in. for W.S.O.

Park County

Yale Petroleum Co.'s No. 2-A Frisby, NW SE NW Section 32-52n-100w, at the north end of the Oregon Basin field, had an initial production of 75 bbl. per hour at 3,472 ft., total depth, from the Embar at 3,426-72 ft., after acidizing with 2,000 gal.

V. M. Kirk's No. 3 Govt., SW SW NW Sec. 24-58n-98w. R.U.R.
Yale Pet. Corp.'s No. 2 Owens, NE SW SW Sec. 20-52n-100w. Cmtd. surf. csg. at 90 ft.; W.O.C.
Yale Pet. Corp.'s No. 1-B Frisby, SW NE NE Sec. 31-52n-100w. C.&P.
Minnelusa Oil Corp.'s No. 1 Roney, SW SW NW Sec. 24-58n-98w. Drlg. 3,100 ft.

Sublette County

The La Barge field had two completions, both of which are better than the average. Texas Co.'s No. 1-E, CWL SW SW Section 27-27n-113w, for the account of the California Petroleum Co., was completed at 1,008 ft. for 165 bbl. the first 32 hours. It had the second sand at 1,002-08 ft.

Marvel Oil Co.'s No. 1-H Government, CEL NE SE Section 28-27n-113w, had an initial production of 315 bbl. per day, at 1,065 ft., total depth, from sands at 923-74 ft. and 994-1,065 ft. It is the best well completed in the field for a long time.

Worth Garretson and associates have purchased from the Newlon estate the NW SE, N½ SW, and SW SW Section 28-27n-113w, and is moving in material for its first well on the west side of the field, an outpost.

Worth Garretson et al's No. 1, NE NW SE Sec. 28-27n-113w. M.I.M.; (first report).
North La Barge Oil Co.'s No. 1 Govt., NE SE NE Sec. 28-27n-113w. T.D. 992 ft.; R.U.C.T. to D.D.
Yellowstone Oil Co.'s No. 1 Henry Budd, SW SE SE Sec. 6-30n-112w. T.D. 1,070 ft.; U.R. 10-in. to 986 ft. for W.S.O.
North La Barge Oil Co.'s No. 3 Govt, SE SE NE Sec. 28-27n-113w. Drlg. 700 ft.

Sweetwater County

Gus Pongiatz et al's No. 1 Clark, C NW NE Sec. 22-19n-104w. Rng. rig.

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Sinclair-Wyoming Oil Co.'s No. 93-A, SW NW NW Sec. 11-26n-90w. Drlg. below 1,976 ft.
Red Desert Corp.'s No. 1 Aspden, NW SW NW Sec. 34-18n-103w. Rig; M.I. equip.
Vermillion Oil Co.'s No. 2 Govt., SW SW SW Sec. 7-12n-99w. Drlg. 2,700 ft.

Uinta County

Elvnor Oil Co.'s No. 1, Cumberland dist., CEL SE SE Sec. 6-18n-116w. Cmtd. 12½-in. at 113 ft.

Washakie County

Paul Boether's No. 1 Govt., SW SW NW Sec. 4-47n-90w. Drlg. 2,305 ft.

Weston County

Osage had one completion, Patterson Oil Co.'s No. 21, NW SW SE Section 17-46n-63w, which is pumping 12 bbl. per day from sand at 670-80 ft.

This leaves only one active operation in the field and little inclination on the part of operators to start any new work. This is due to the production from the field coming into competition in its own district with crude being trucked in from the Lance Creek field. The posted price for Lance Creek is 77 cents, which is 32 cents under Salt Creek crude of the same gravity, this differential having been established to offset pipe-line rates to the east where the crude comes into competition with Mid-Continent crude. The projected pipe line from Lance Creek to Newcastle to be built by A. B. Cobb and the Yale Oil Corp., will further increase the competition which Osage crude has to meet.

Geo. Keisling's No. 2 Lundberg, CWL NE SE Sec. 35-46n-64w. Cmtd. 8¼-in. at 1,061 ft.; W.O.C.
Gose Oil Synd.'s No. 1, NE NE NE Sec. 28-47n-63w. Drlg. 4,963 ft.
Bruce C. Teeter's No. 1 State, C SW NE Sec. 36-32n-61w. T.D. 2,270 ft.; P.B. and tstg. upper horizon.

MONTANA

Blaine County

F. J. Buscher's No. 1 Evey, C NE SE Sec. 12-32n-17e. S.D. 61 ft.

Carbon County

Ohio Oil Co.'s No. 9 Souders, C NE SW Sec. 2-7s-21e. Recmtd. 5,500-11 ft.; drld. out to 5,511 ft.; tstg.
Miracle Oil Co.'s No. 2 Govt., CWL NE SE Sec. 3-6s-23e. T.D. 2,388 ft.; fsg. for tools stk. at 1,560 ft.
R. C. Tarrant's No. 2 McKay, C SE NW Sec. 4-6s-18e. T.D. 2,810 ft.; sdtrkd. tools at 2,615 ft.; landed 8¼-in. at 2,800 ft. to S.O.W. in T. Lakota at 2,810 ft.

Choteau County

Security Pet. Corp.'s No. 1 Johnson, C NE NE Sec. 23-26n-3e. T.D. 2,122 ft.; show heavy oil in T. Embrick sd. at 2,091 ft.; U.R. 6⅝-in. to carry to T. of Mad.

Fallon County

Montana-Dakota Utilities Co.'s No. 140, SE NW NE Sec. 24-9n-58e, Cedar Creek dist. R.U.
Montana-Dakota Utilities Co.'s No. 141, SE NW NE Sec. 24-8n-59e. R.U.
Montana-Dakota Utilities Co.'s No. 142, NE SW SW Sec. 33-7n-60e. R.U.
Montana-Dakota Utilities Co.'s No. 143, SE NW NE Sec. 4-6n-60e. R.U.

Fergus County

C. E. Emmons et al's No. 3, CWL NW NW Sec. 5-21n-18e. Drlg. 460 ft. in Eagle sd.; S.G. at 380 ft.

Glacier County

Another large well was completed in the Sunburst sand in the Lander pool on the west side of the Cut Bank field in Santa Rita Oil & Gas Co.'s No. 5 Lander, NE SW SE Section 16-35n-6w, which swabbed 320 bbl the first 24 hours at 2,858 ft., total depth. It had the sand at 2,795-2,848 ft. The first show of gas was at 2,805-14 ft., and the first oil at 2,814 ft. The main pay was at 2,840-48 ft. and oil rose only 800 ft. in the hole, but it quickly responded to pumping.

A. Kately, agent's No. 1 Kramer, NE SE NE Section 15-34n-6w, bailed only 4 bbl. the first day and 3 bbl. the second day, and is shut down at 2,948 ft. The Sunburst and lower Cut Bank sands were missing. The upper Cut Bank was at 2,885-2,939 ft.

Helmac Trust's No. 3 Government, Lot 3, Section 32-33n-5w, swabbed 132 bbl. the first 24 hours at 2,837 ft., total depth, from the Cut Bank sand at 2,795-2,831 ft., the main pay being at 2,820-31 ft.

There was only one new operation.

Santa Rita O. & G. Co.'s No. 5 Whetstone, C Lot 2, Sec. 27-35n-6w. M.I.M.; (first report).
R. C. Tarrant's No. 3 Hope, C NE Sec. 18-34n-5w. R.U.
Annand-Hutchings' No. 5 Federal Ld. Bnk., CSL NE SW Sec. 11-34n-6w. Drlg. 335 ft.
Texas Co.'s No. 8 Unit 9, C NW NE Sec. 9-32n-5w. B.R.
Glacier Prod. Co.'s No. 4 Corrigeux, C SE SW Sec. 28-33n-5w. Drlg. 1,910 ft.
Consolidated Gas Co.'s No. 3 State, SE NW SE Sec. 26-35n-6w. Spdg.
Santa Rita O. & G. Co.'s No. 3 Rasmussen, C NW SE Sec. 32-33n-5w. Drlg. 700 ft.; cmtd. 10¾-in. 591 ft.
Texas Co.'s No. 2 Unit 11, SE NW Sec. 11-35n-6w. Drlg. 2,190 ft.
Glacier Prod. Co.'s No. 3 Whetstone, C SE NW Sec. 8-33n-5w. T.D. 2,735 ft.; fsg. tools.
Glacier Prod. Co.'s No. 5 Bonnett, C NW SE Sec. 4-32n-5w. T.D. 250 ft.; redrlg.
Texas Co.'s No. 5 State, C NE NE Sec. 16-32n-5w. Drlg. 2,590 ft.
Texas Co.'s No. 5 Curran, C NW SE Sec. 8-32n-5w. Drlg. 2,495 ft.
Castle-Pardee's No. 2 Tarrant-Corriguex, SE NE NE Sec. 2-33n-6w. Drlg. 1,820 ft.
Texas Co.'s No. 4 Tweedy, C SE NW Sec. 21-35n-6w. Drlg. 2,839 ft.
Cobb-Reagan's No. 4 Jackson, SW SW SE Sec. 5-32n-6w. R.U.R.

Hill County

William Hanlon's No. 1 Government is spudding in a 3,800-ft. test to the Madison lime on the Signal Butte structure just south of the Canadian line. He has a block of nearly 50,000 acres.

Wm. Hanlon's No. 1 Govt., C SW NE Sec. 19-37n-15e. Spdg.; (first report).

Petroleum County

H. Clark Rowland's No .1 Brundige-Mink, NE SE NW Sec. 35-14n-25e. T.D. 722 ft.; 8⅝-in. on bttm.; prep. to res.
Watson Oil Co.'s No. 1 Austed, SW NW SE Sec. 22-13n-28e. T.D. 1,540 ft.; U.R. 10-in. to bttm.

Pondera County

Ted Hawley's No. 3 State, NW SE SE Sec. 16-27n-4w. Drlg. 1,700 ft.

Toole County

Boris A. S. Aronow's No. 3 Ellingson, NW SE SE Section 15-35n-3w, in the Kevin pool, was completed last December for an estimated production of 200 bbl. per day before it was pinched in. Lately it has been flowing around 125 bbl. Two weeks ago the Big West Oil Co.'s No. 3 Ellingson, ½ mile to the east, came in for 100 bbl. per day through a ¼-in. choke and the first-named well went dead. However, it soon came back stronger than ever and at last reports had gradually increased to 416 bbl. per day, or better than when it was completed.

Coolidge & Coolidge's No. 8 Shaw, NW NE NE Section 35-36n-2w, is pumping 8 bbl. per day from the Sunburst at 1,530-80 ft. after a shot with 18 qt.

Crumley & Son's No. 18 Fryberger, CEL SE SW Section 24-35n-3w, is pumping 15 bbl. per day from the contact at 1,565-79 ft. after acidizing with 1,000 gal.

There were three new operations, one of which is Twin Fields Oil Co.'s No. 1-A Government. This is a new company formed by W. M. Fulton as a reorganization of the Fulton-Commonwealth Oil Co., which was financed by Canadian interests, who recently sold their holdings to American interests.

Twin Fields Oil Co.'s No. 1-A Govt., NW cor. Sec. 28-35n-3w. Spdg.; (first report).
Rimrock Oil Co.'s No. 6 Schmidt, NW SE NW Sec. 29-35n-3w. Drlg. 1,506 ft.; (first report).
H. O. and C. D. Stock's No. 1-A Govt., SE NW SE Sec. 17-35n-2w. Drlg. 160 ft.; (first report).
A. E. Crumley & Son's No. 19 Fryberger, NE NW SE Sec. 24-35n-3w. Drlg. 1,380 ft.
Wm. Hanlon et al's No. 1 Merton Mortgage, C SW SE Sec. 6-37n-1w. Spdg. 30 ft.
Coolidge & Coolidge's No. 6-A State, SW NW NW Sec. 36-36n-2w. Drlg. 1,310 ft.
O. A. Nepstad's No. 1 Hugi, NW SE NW Sec. 11-35n-3w. Drlg. 120 ft.; (cor. loc.).
G. & A. Oil Co.'s No. 15 Goeddertz, CEL NE SW Sec. 23-35n-3w. Drlg. 1,335 ft.
Adams-Hessla's No. 6 McMannus, C SE SE Sec. 21-35n-2w. Loc.
Henry Vander Pas' No. 4 Cedar Creek, CWL SW SE Sec. 31-35n-1w. T.D. 1,405 ft.; Sunburst dry at 1,190-1,200 ft.; cmtd. 6⅝-in. at 1,350 ft.
L. J. Yealy's No. 14 Shaw, NW SW NE Sec. 35-36n-2w. Drlg. 160 ft.
S. V. Day's No. 1 Halter, C NE SE Sec. 17-35n-2w. Drlg. 705 ft.
Fulton Pet. Co.'s No. 4 Thompson, CNL SW NE Sec. 28-35n-3w. Drlg. 1,730 ft.; S.O.; contact at 1,715 ft.; dry.
Prevol & Shay's No. 6 Govt., NE NW SW Sec. 11-35n-3w. R.O.G.
R. G. Parrant's No. 1 Holbrook, C NW NE Sec. 2-36n-3w. T.D. 1,400 ft.; cmtd. 7-in.
Casper T. Oien's No. 9 Engemoen, NW NE NW Sec. 14-35n-2w. Drlg. 720 ft.

Yellowstone County

Calitana Oil Co.'s No. 1 Stallinberger, NE NE SW Sec. 18-3n-23e. T.D. 5,129 ft.; cmtd. 7-in. at 4,907 ft.; acd. and showing few bbl. 45° oil.
Riverton Oil Co.'s No. 1 Fox, CEL NW NE Sec. 14-2n-23e. T.D. 2,150 ft.; C.O. at 1,920 ft. to res.

UTAH

Daggett County

Mountain Fuel Supply Co.'s No. 1 Govt., SE NE NE Sec. 19-3n-24e. Drlg. 3,175 ft.

Grand County

Reeder Corp.'s No. 1 State, NE NE NE Sec. 16-22s-19e. Drlg. 1,060 ft.

Summit County

Longwell Pet. Co.'s No. 1, SE SW SE Sec. 35-3n-5e. T.D. 3,274 ft.; tstg. S.O. in sd. at 3,256-74 ft.

SOUTH DAKOTA

Butte County

Two Top O. & G. Co.'s No. 2, SE NE Sec. 30-10n-6e. T.D. 2,725 ft.; rng. Schlmb. test; Muddy at 2,550-75 ft.; had S.O.&G.

Illinois Fields

(Continued from Page 68)

Owners estimate it will be good for 150 bbl. per day. Allen and others' No. 1 Morgan, NW cor. NE Section 31-10n-13w, total depth 481 ft., shot with 20 qt., and may make a 10-bbl. well on the pump.

In Montgomery County Brown's No. 1 Lipe, SW SW SE Section 28-10n-3w, drilling at 1,743 ft., St. Louis lime topped at 1,060 ft.

In Jasper County Aten's No. 1 Mendenhall, SW cor. SE Section 17-8n-10e, total depth 2,064 ft. and dry; shut down for orders.

In Madison County Wilson's No. 1 Danderman, SW SW SW Section 1-5n-6w, total depth 1,833 ft., 6 ft. in Devonian lime. Seven-inch casing set at 1,827 ft.

In Jasper County Pure Oil Co.'s No. 1 Redman, C E½ NW NW Section 16-5n-10e, drilling at 3,886 ft. Pure's No. 1 Aldridge, C E½ NE NW Section 17-5n-10e, drilling at 1,703 ft.

In Lawrence County Walter Payne's No. 1 Monjar, SW NE NW Section 28-4n-11w, drilling at 1,670 ft.

In Clay County Benedum & Trees, Inc.'s No. 1 Hagan, NW SE NE Section 28-4n-7e, coring below 3,055 ft., no showing. Madden's No. 1 Sloan, NE SE SW Section 6-4n-5e, drilling at 1,750 ft.

In Madison County Jennings' No. 1 Mossiman, SE SW NW Section 22-4n-5w, shut down for orders at 2,850 ft., with 6-in. casing set at 2,820 ft.

In Clay County Shulman's No. 1 Colclasure, C W½ SW SW Section 10-3n-7e, drilling at 893 ft. Kingwood Oil Co.'s No. 1 Neff, SW SE SW NW Section 14-2n-7e, total depth 3,207 ft., pumped 122 bbl. of water in 12 hours; then pumped 25 bbl. of oil and 140 bbl. of water in 24 hours; later pumped 9 bbl. of fluid per hour, 85 per cent water.

In Lawrence County W. L. Dorsey's No. 1 Vandermost, SE SW NW Section 2-2n-12w, Ste. Genevieve lime top at 1,760 ft., total depth 1,834 ft.

In the Bartelso pool in Clinton County Moseback's No. 13 Robbins, NW SW SE Section 5-1n-3w, swabbed and flowed 400 bbl. in 24 hours from Devonian lime, total depth 2,442 ft. It had been acidized with 2,500 gal. It was still being tested.

In Wabash County Renfro's No. 1-A Zimmerman, SW SE SE Section 36-1n-13w, rig up. Leighty's No. 1 Hahn, NE SW NW Section 8-1n-12w, drilling at 1,517 ft.

In Edwards County Tide Water Associated Oil Co.'s No. 1 Bunting, SE SE NW Section 21-1s-10e, drilling at 3,045 ft.

In Wabash County Mode & Bruce's No. 1 Seiler, NE SE NW Section 30-1s-12w, rig up.

In Alexander County Arnold & Middleton's No. 1 Hodges, SE SE NW Section 35-15s-2w, drilling below 1,000 ft.

In Williamson County Nation Oil Co.'s No. 1 Coleman, NW SW SW Section 1-10s-1e, total depth 2,021 ft., plugged back to 1,967 ft. and shut down for orders.

In Jackson County Barton & Shipman's No. 1 Hall, NW NW SW Section 8-9s-1w, drilling at 1,975 ft. White's No. 1 Dean, NE NW NW Section 18-9s-3w, fishing at 1,160 ft.

Revised A.P.I. Standards Pipe and Ring Joints

New editions of two standard specifications for oil-field equipment have been published by the American Petroleum Institute's Division of Production, C. A. Young, secretary, has announced. The revised standards cover casing, drill pipe, and tubing, and ring joints for steel flanges and flange unions, the latter of which is tentative.

A.P.I. Standards 5-A, "Casing, Drill Pipe and Tubing," tenth edition, replacing the August 1935 ninth edition, is a 120-page booklet. A.P.I. Standards 5-G-3, "Ring Joints for Steel Flanges and Flange Unions," second edition, tentative, is a 108-page booklet replacing the September 1937 first edition. Price of each booklet is 75 cents.

Gasoline Taxes Equal 45 Per Cent Crude-Oil Value

The 18 states with annual crude-oil production of 1,000,000 bbl. or more collect in gasoline taxes a total revenue which is equivalent to 35 per cent of the value of all the crude oil produced in these states reports the American Petroleum Industries Committee. The duplicating federal gasoline tax adds approximately 10 per cent additional, making the total taxes collected on gasoline used in the oil-producing states equivalent to 45 per cent of the value of the total crude oil produced.

In 10 of the oil-producing states the state and federal taxes on gasoline used therein exceed the value of the crude oil produced, and in no oil-producing state is the tax burden on gasoline less than the equivalent of 10 per cent of the value of the total crude oil produced therein.

Michigan Field Report

By OTTO C. PRESSPRICH

19 New Wells, With Allegan Leading in Results for Week

SAGINAW, Mich., May 27.—Productive completions ran to an unusually high percentage last week in Michigan oil fields with development centered principally in production areas. Nineteen of the 23 completions reported were listed as oil wells, their daily initial ranging from 30 bbl. to near 600 bbl. a day for a total of 3,274 bbl.

Paced by the Heath Township section, Allegan County led with eight new oil wells, with a total initial production of 1,364 bbl., and one dry hole. Trailing was Ottawa's Tallmadge Township sector with six oil wells, good for 857 bbl. a day, while the Sherman-Wise district of Isabella County, had three wells good for 783 bbl., and two Walker Township completions in Kent County, which added 270 bbl. more. Among the failures were a Calhoun County wildcat and two tests in Van Buren County.

During the week the state Conservation Department issued 14 permits for oil and gas exploration in six counties. The total of permits issued for this year thus was increased to 468. Allegan County led with six of the permits. Ottawa County got three, Isabella two, Manistee, Montcalm, and Van Buren one each.

After flowing naturally more than 300 bbl. in the first 24 hours, Cities Service Oil Co.'s No. 2 Tubbs, in Section 17 of Wise Township of Clare County, was acid treated and the production increased to 583 bbl., the best well of the week in Michigan. It was an offset well; three others in that area were near completion stages. And in Sherman Township, Isabella County, Pure Oil Co.'s No. 5 Embrey was rated at 125 bbl., after acid. It is on the far eastern edge of the field.

Mesel & Spielberg's No. 1 Lipski, in Section 14 of Tallmadge, gaging 350 bbl., after acid treatment, was the biggest of the wells completed in the southwestern section. Five others did 200 bbl., or better. Following is the completions survey:

Allegan County

Heath Township (3n-14w)—Acid treated at a depth of 1,526 ft., production initially was 265 bbl. a day from Bridger Basin Oil Co.'s No. 1 Marvin and George Nevenzel, NW NE SW Section 3. Fletcher & Leman's No. 2 Nevenzel, SW NW SW Section 3, rated 150 bbl. a day, after acid treatment, at a depth of 1,442 ft. Fortney Oil Co.'s No. 1 Elizabeth Kuite, NE SW NW Section 4, was dry and abandoned at 1,571 ft. Fletcher & Leman's No. 2 P. H. Van Sweden, SW NE SE Section 4, was good for 200 bbl. a day, natural initial, at 1,445 ft. Production naturally was 140 bbl. a day from Wiser Oil Co.'s No. 2 John Klein, NE NW SE Section 4, at 1,508½ ft. Frank S. Vahue got initial natural production of 80 bbl. a day from No. 2 John Klein, C E½ SW NW Section 10, at a depth of 1,519 ft.

Overisel Township (4n-14w)—Jacob Bolema's No. 1 C. Voorhorst estate, NW NW SE Section 34, was good for 100 bbl. a day at 1,435 ft. after it was acidized.

Salem Township (4n-13w)—Socony-Vacuum Oil Co., Inc.'s No. 4 D. H. Kluinsteker, SE NW NW Section 10, rated 229 bbl. initially at a depth of 1,624 ft. The well was acid treated. After acid, initial was 200 bbl. a day from Salem Gas & Oil Co.'s No. 4 John Gaca, NE NW SW Section 14, completed at 1,586 ft.

Calhoun County

Burlington Township (4s-7w)—Alfred G. Morency's No. 1 Herman Platz, NE NW NE Section 3, was abandoned as dry at 1,410 ft.

Isabella County

Sherman Township (15n-6w)—Pure Oil Co.'s No. 5 J. W. Embrey, SW SE SW Section 34, acid treated, produced 125 bbl. a day, total depth 3,619 ft.

Wise Township (16n-3w)—Best well of the week in Michigan was Cities Service Oil Co.'s No. 2 Tubbs, SE NW SE Section 17, completed at 3,720 ft., and getting initial of 583 bbl. a day, after acid treatment. J. V. Wicklund Development Co.'s No. 1 E. L. Carpenter, SE SW NW Section 17, rated 75 bbl. a day, after being acidized, at total depth of 3,730 ft.

Kent County

Walker Township (7n-12w)—R. E. King's No. 1 Nellie Walsh, SE NE NE Section 31, produced 55 bbl. a day, after acid treatment, at a depth of 1,179 ft., and Certain-Teed Products Co.'s No. 17 fee, NE NE SE Section 33, was good for 195 bbl. a day, after acid treatment at 1,889 ft.

Ottawa County

Tallmadge Township (7n-13w)—Production ranged from 30 bbl. a day upward in the six completions in Tallmadge. Gulf Refining Co.'s No. 2 A. E. Rapp, NE NW SE Section 23, rated 100 bbl. per day, at 1,879 ft. Smith Petroleum Co.'s No. 1 H. T. White, S½ S½ SE NW Section 23, gaged 217 bbl. at 1,876 ft. Mesel & Spielberg's No. 1 A. Lipski, SE NE SW Section 14, completed at 1,856 ft., was good for 350 bbl. Basin Oil Co. and Abe Snyder's No. 3-B John Connell, NW SE SE Section 24, was getting 110 bbl. a day at 1,926 ft. Nelson Development Co.'s No. 1 Richard Thome, SW NW NW Section 24, rated 30 bbl. a day at 1,890 ft. Gulf Refining Co.'s No. 1 Ralph Bronkema, SW NE NW Section 23, was producing 50 bbl. a day. All the wells had been acidized.

Van Buren County

Columbia Township (1s-15w)—S. L. Godfrey and O. J. Hosier completed No. 1 Harvey Robbins, SW SE NW Section 19, as a dry hole, abandoning it at a depth of 1,173 ft. Also dry and abandoned, at 1,208 ft., was Clapsaddle & Harris' No. 3 Willerton, SW NW NE Section 23.

Ohio Fields

(Continued from Page 68)

and 75,000 cu. ft. from the second Berea, depth 1,431 ft. In Carthage Township, Ohio Fuel Gas Co.'s No. 1 W. A. Barnhill, Section 16, has an open flow of 730,000 cu. ft. of gas from the Keener sand, depth 1,263 ft. In Bern Township, Bern Oil & Gas Co.'s No. 1 A. D. McCune, Section 12, had some gas in the Maxon sand but it was abandoned after a test, depth 1,052 ft. In York Township Ohio Fuel Gas Co.'s No. 182 Sunday Creek Coal Co., Section 32, found the Berea sand dry, depth 1,023 ft.

In Fairfield County, Walnut Township, Gas Producing Co.'s No. 2 John Holliday, Section 14, made 10 bbl. of oil the first day after the shot in Newberg sand at 1,984-95 ft.

In Guernsey County Jewell Gas Co., Inc., found the Berea sand dry in two tests, No. 1 James H. Watson, Section 14, Valley Township, depth 1,391 ft.; No. 1 R. B. Linn, Section 1, Wills Township, depth 1,440 ft.

In the Newark field in Licking County Wayne Moore and others' No. 1 Jack Allen, fourth quarter, is a small gas well in the Clinton, gaging 65,000 cu. ft. open flow, depth 2,321 ft. William Stricker and others' No. 2 Zar Fisk, Lot 2, fourth quarter, Berea dry, depth 590 ft.

In Lorain County, Penfield Township, Wiser Oil Co.'s No. 3 Thomas Szucs, Lot 45, made 15 bbl. of oil in 24 hours after the shot in Berea sand at 189-250 ft.

In Meigs County, Sutton Township, Joe Rubin and others' No. 1 Mary Snowball, Section 36, was shot in the Ohio shales with 1,800 lb. of gelatin and had gaged 60,000 cu. ft. of gas when shut in, depth 3,290 ft.

In Morgan County, Marion Township, W. S. Harris' No. 2 Evalyn Worthington, Lot 13, is a gas well with an open flow of 400,000 cu. ft. from the Brill formation, depth 993 ft.

In Wayne County, Canaan Township, Harley Brothers' No. 1 John Classon, Section 8, found the Berea dry, depth 549 ft.

In Washington County, Aurelius Township, in the village of Elba, Rockey Oil Co.'s No. 1 Delbert Stack is a pumper in the Berea making 4 bbl. of oil, depth 1,506 ft. In Warren Township, Anderson Co.'s No. 1 A. Francis gaged 100,000 cu. ft. of gas from the Maxon sand, depth 1,324 ft.

Southwest Texas Fields

(Continued from Page 81)

jetting. South Alfred field: I. K. Howeth's No. 1-B Adams, perforated casing 4,690-93½ ft., 93 bbl., ⅛-in. choke.

Jim Hogg County

Colorado field: Humble Oil & Refining Co.'s No. 9 King, 3,309 ft., 217 bbl., ⅛-in. choke. Humble Oil & Refining Co.'s No. 10 King, 3,067 ft., 212 bbl., ⅛-in. choke.

Live Oak County

Oakville field: Moore Development Co.'s No. 1 McGriff, perforated casing at 2,143-46 ft., 394 bbl., ¼-in. choke. White Creek field: Alvin Brauer's No. 1 Bonham, perforated casing 1,484-92 ft., 139 bbl., pumping.

Refugio County

Refugio field: W. W. Chapman's No. 3-B Mitchell, perforated casing 6,308-14 ft., 95 bbl. distillate, various chokes. Tomoconnor field: Quintana Petroleum Corp.'s No. 10-B Williams, perforated casing 5,907-13 ft., 715 bbl., ¼-in. choke.

Nueces County

Stratton field: Gulf Plains Corp.'s No. 1 Butts, 6,262 ft., 25 bbl. distillate, 9/64-in. choke.

San Patricio County

East White Point field: Houston Oil Co.'s No. 12 Baldwin, perforated casing 5,714-22 ft., 259 bbl., 5/32-in. choke. Sinclair Prairie Oil Co.'s No. 1-694 State, perforated casing 5,605-15 ft., 134 bbl., ¼-in. choke. W. R. R. Oil Co.'s No. 1-747 State, perforated casing.

Starr County

Rincon field: W. R. Davis Co., Inc.'s No. 1-E Davenport-State, 2,410 ft., dry and abandoned. W. R. Davis Co., Inc.'s No. 3-A Slick estate, perforated casing 4,182-4,203 ft., 371 bbl., 21 hours, ¼-in. choke. South Ricaby field: Clopton & Mitchell's No. 4 Wardner, 1,831 ft., 51 bbl., pumping. Sun field: Humble Oil & Refining Co.'s No. 4 Montalvom, 5,448 ft., dry and abandoned.

Webb County

Adami field: F. M. Bozo's No. 1 Adami, sand 998-99½ ft., 100 bbl. of fluid, 90 per cent water, pumping. Katherine Ryan's No. 2 Adami, sand 975-88 ft., 4 bbl., pumping.

Zapata County

Escobas field: Dulup Oil Co.'s No. 19-A Trevino, sand 1,245-67 ft., 11 bbl., pumping. Kleiner & Hill's No. 21 Trevino, 1,240 ft., 3 bbl., pumping.

Canadian Fields

Completions and Operations in Northwest and in Ontario

By VICTOR LAURISTON

CHATHAM, Ont., May 25.—The latest schedule of crude allowables for Turner Valley, which reduced the aggregate allowable to 18,000 bbl. a day, will likely be effective only for a few weeks. The previous schedule allowed 20,000 bbl. a day from March 26, but completions since then had brought the daily field output up to about 23,000 bbl. and as this was in excess of current demands, storage had increased to a point where it was necessary to cut allowables. A total of 103 wells were listed, with average production of 174.7 bbl.

Of the 18,000-bbl. allowable, independent companies with 50 wells produce 7,264 bbl. a day. The Royalite group with 21 wells has 4,376 bbl.; Brown Oil Corp. and affiliates with 13 producers has 1,535 bbl.; and Anglo-Canadian Oil Co. and affiliates, with 19 wells, has 2,911 bbl.

Arrow Producer Leads Field

Following the completion of official tests, Arrow Royalties' No. 1, LSD 16, Section 13-19-3w5, finished at 8,102 ft., was given permanent allowable of 485 bbl. a day, in place of a previous temporary allowable of 416 bbl., due to increased bottom-hole pressure, amounting to 2,180 lb. Gas-oil ratio was 640 ft., and the well flowed 3,577 bbl. a day through 1-in. choke. With the new quota, Arrow No. 1 becomes the largest Turner Valley producer.

In Section 5-19-2w5, West Central Turner Valley, Vanpeg Royalties' No. 1, LSD 9, finished at 7,072 ft., has temporary allowable of 95 bbl.

In Section 6-19-2w5, East Crest Oil Co.'s No. 5, LSD 9, finished at 7,762 ft., has been increased to 283 bbl., tests showing 1,490 lb. bottom-hole pressure, gas-oil ratio of 822 ft., and production through 1-in. choke of 900 bbl. a day.

In Section 7-19-2w5, Royalite Oil Co.'s No. 48, LSD 10, finished at 7,533 ft., is testing after acid treatment.

In Section 18-19-2w5, Calmont-Northwest's No. 1, LSD 3, finished at 7,609 ft., has been acidized and is testing for official allowable. Davies Petroleums' No. 5, LSD 10, same section, finished at 7,391 ft., is waiting for allowables.

In the southwestern area, Northwest-Hudson's Bay No. 3, LSD 15, Section 8-18-2w5, finished at 8,120 ft., 435 ft. in the Madison, is testing, and looks like a good producer. Royalite's No. 50, LSD 7, Section 17-18-2w5, finished at 7,790 ft., is testing. York Oils' No. 3, LSD 3, Section 20-18-2w5, has finished drilling in the black lime somewhat below 8,020 ft., and quickly cleared itself of drilling fluid. It has been acidized preparatory to official test, and looks like a good producer.

Royal Canadian Oil Co.'s No. 4, LSD 12, Section 32-18-2w5, has finished at 8,095 ft. after drilling 450 ft. in the Madison, and is acidizing.

Anglo-Phillips Completed

In the southwest extension of North Turner Valley, Anglo-Phillips' No. 1, LSD 14, Section 15-20-3w5, finished at 9,054 ft., some 474 ft. in the Madison limestone. It got the black lime at 9,050 ft. A drill-stem test of the upper horizon at 8,814 ft. showed 397 bbl. in 9 hours. Drill-stem test of the lower horizon was unsuccessful because of depth, but showed that the hole was free from water. Swabbing started but discontinued when the well started to head. Owing to its depth, production tests are being handled very carefully. The well's depth was exceeded only by Okalta Oil Co.'s No. 6, on the southwest flank. The water problem is being closely watched as the presence or absence of water will have an important bearing on further tests in this area. While results of drill-stem tests in the lower lime were not definite, cores indicated that this horizon was one of the most porous yet encountered in Turner Valley. Test was drilled on acreage of Jack Phillips and associates by Anglo-Canadian Oil Co., which controls 700 acres in the vicinity of the well. Location is about 2 miles south and a little east of Home Oil Co.'s No. 2 Millarville, and south and west of Model Oils' No. 1, the first crude producer in North Turner Valley.

Tests in the Lime

In Section 6-19-2w5, West Turner Valley, Kamalta Oils' No. 1, LSD 1, is below 8,070 ft., after getting the Madison limestone at 7,689 ft., and will be an early completion. The upper zone cored 120 ft., at least 50 ft. showing exceptional porosity. Casing was set between the two horizons of the lime.

New Tests Planned

F. P. Byrne and associates have taken over the location of Alliance Royalties' No. 1, LSD 9, Section 13-19-3w5, in West Central Turner Valley, and will drill within the next month, using rotary outfit from Arrow Royalties' No. 1. Location offsets Arrow No. 1 producer to the south. The new test will be known as Twin Valley No. 1.

Allied Oil Producers

Allied Oil Producers, Ltd., recently incorporated with head office at Vancouver, B. C., is taking over the Turner Valley holdings of various companies sponsored by Neil McQueen and associates. Mr. McQueen is a son of the late A. M. McQueen, at one time vice president of Imperial Oil, Ltd. The properties taken over include Oil Ventures' No. 1, with 186-bbl. allowable; Consolidated's No. 1, with 254 bbl.; Richwell Oil Co.'s No. 1, with 121 bbl.; York Oils' No. 1, with 240 bbl.; and York's No. 2, with 160 bbl. Officers of the company include: President, Neil McQueen; directors, Alexander Hannah, K.C., M. M. O'Brien, and M. M. Newell, Jr., with one director yet to be appointed. In addition to handling production, the company will maintain the field management staff of Oil Ventures, Ltd.

Tests in the Foothills

On the Pouce Coupe structure in the northern foothills, Guardian Oil Co.'s No. 1, Section 7-80-12w6, has resumed drilling from 5,500 ft., approximately 600 ft. in the lime. John Lund is in charge of drilling. Test was taken over from Benedum & Trees, Inc., of Pittsburgh, Pa., which last year carried it to the present depth.

On the Brazeau structure, Home Oil Co.'s No. 1, LSD 16, Section 7-43-17w5, is in the Fernie shales below 8,399 ft., with the lime expected around 8,800 ft. Outcrops indicate the Fernie may be somewhat thicker than in Turner Valley.

In the Ram River-Clearwater area, Ram River Oils' No. 2, Section 1-37-11w5, has derrick up and is rigging.

On the Moose dome, Dome Oil & Gas Co.'s No. 1, LSD 4, Section 16-22-6w5, has camp buildings up and will start drilling early in June.

In the Sheppard Creek area, south of Turner Valley, Alberta Pacific's No. 1, LSD 6, Section 7-16-2w5, is making new hole after sidetracking past lost tools to 4,331 ft.

On the Mill Creek structure in the southern foothills, Alliance Royalties' No. 2, LSD 14, Section 11-6-2w5, is in the Benton formation below 1,583 ft.

Steveville Field

In the Steveville field, east of Calgary, Standard of British Columbia's No. 1 Princess, LSD 13, Section 22-20-12w4, has cemented 7-in. casing in the Devonian lime at 6,155 ft. and is gun-perforating to test production in various horizons.

Border Fields

In the Taber field, southern Alberta, Border Petroleums' No. 1, LSD 5, Section 32-19-17w4, bottoming at 3,480 ft., has pumped out large quantities of water and is now flowing some crude. Testing is continuing.

Saskatchewan Operations

In the Lloydminster field, western Saskatchewan, Franco-Triangle's No. 3, LSD 13, Section 14-49-28w3, bottoming at 1,738 ft., has bailed about 200 bbl. of heavy crude, and will install gravel pack to put the well in steady production. Shaw Petroleums' No. 3, LSD 5, Section 23-49-28w3, in the top of the oil sand at 1,710 ft., is waiting for equipment to deepen into the pay. Lloydminster Royalties' No. 1, LSD 4, Section 36-49-1w3, bottoming in the oil sand at 1,925 ft., has installed pumping equipment. A half mile farther south, Lloyd-Gates' No. 1, LSD 9, Section 26-49-1w4, is rigged and will spud in a few days. Pipe line will be laid from Shaw Petroleums' No. 1 gasser to the new Lloydminster refinery to supply fuel for refining purposes.

Gulf Coast Fields

(Continued from Page 76)

Location for an interesting deep test was made in Bay Des Illetes, Jefferson Parish, by Shell Oil Co., Inc., for No. 1 State in Section 27-20s-24e.

TEXAS GULF COAST COMPLETIONS IN PROVEN FIELDS

Brazoria County

Old Ocean field: Stanolind Oil & Gas Co.'s No. 1 Hughes, perforated casing 10,080-10,117 ft., 173 bbl., various chokes. West Columbia field: Hogg Oil Co.'s No. 11 Hogg, sand 5,512-46 ft., 468 bbl., ¼-in. choke. Texas Co.'s No. 14 Phillips, 5,585 ft., 279 bbl., 12 hours, ¼-in. choke.

Chambers County

Anahuac field: Gulf Oil Corp.'s No. 10 Knowles, sand 7,054-70 ft., 603 bbl., ¼-in. choke. Humble Oil & Refining Co.'s No. 33 Johnson, sand 7,220-32 ft., 670 bbl., ¼-in. choke. Cedar Point field: Standard Oil Co. of Texas' No. 31-127 State, 7,413 ft., dry and abandoned.

Fort Bend County

Thompson field: H. M. Naylor and others' No. 1 Hamphil, sand 7,891-7,975 ft., 277 bbl., ⅛-in. choke. Humble Oil & Refining Co.'s No. 33 Davis, sand 5,398-5,410 ft., 521 bbl., ¼-in. choke.

Galveston County

Dickinson field: Pan American Production Co.'s No. 1 Moore, 8,542 ft., gas well. Hastings field: Humble Oil & Refining Co.'s No. 14 Hadon, sand 6,081-96 ft., 422 bbl., ¼-in. choke. High Island field: Dr. D. C. Iles, sand 149-51 ft., 13 bbl., pumping.

Hardin County

Silsbee field: Republic Production Co. and others' No. 31 fee, sand 6,879-6,917 ft., 491 bbl., ¼-in. choke.

Harris County

Clear Lake field: Humble Oil & Refining Co.'s No. 46-C West, 5,914 ft., 96 bbl., ⅛-in. choke. Friendswood field: Humble Oil & Refining Co.'s No. 36 Beamer, 6,038 ft., 744 bbl., ¼-in. choke. Goose Creek field: Grace Oil Co.'s No. 2 Wright, sand 1,702-29 ft., 204 bbl., pumping.

Jackson County

West Ranch field: Humble Oil & Refining Co.'s No. 4-B Toney, 5,560 ft., 353 bbl., ¼-in. choke. Magnolia Petroleum Co.'s No. 71-A West, perforated casing 5,125-33 ft., 500 bbl., ¼-in. choke. Magnolia Petroleum Co.'s No. 74-A West, perforated casing 5,754-62 ft., 542 bbl., ¼-in. choke. Magnolia Petroleum Co.'s No. 76-A West, perforated casing 5,590-96 ft., 465 bbl., ¼-in. choke. Renwar Oil Corp.'s No. 1 Phillipi, perforated casing 5,750-62 ft., 620 bbl., ¼-in. choke.

Jefferson County

Lovells Lake field: Humble Oil & Refining Co.'s No. 17 Broussard, 7,791 ft., 192 bbl., ⅛-in. choke. Humble Oil & Refining Co.'s No. 2 Steinhagen, sand 7,801-04 ft., 172 bbl., ⅛-in. choke.

Matagorda County

Bay City field: Pan American Production Co.'s No. 2 Richers, sand 9,140-90 ft., 126 bbl., various chokes.

Polk County

Segno field: Humble Oil & Refining Co.'s No. 22-B Kirby Lumber Co., sand 8,042-8,150 ft., 345 bbl., ¼-in. choke.

Wharton County

Pickett Ridge field: Texas Co.'s No. 1 Kubela, 4,595 ft., 8 bbl., 14 hours, ⅛-in. choke. Withers field: Humble Oil & Refining Co.'s No. 4 Blue Creek Ranch Co., sand 5,536-40 ft., 331 bbl., ¼-in. choke. McDannald Oil Co.'s No. 1 Foley-Willis, sand 5,512-44 ft., 185 bbl., ⅛-in. choke. Texas Co.'s No. 23 Broussard, 5,538 ft., 93 bbl., ⅛-in. choke.

WILDCAT OPERATIONS

CALIFORNIA

IMPORTANT WELLS AND SOUTHERN CALIFORNIA WILDCATS

Company, well, location and county—	S.T.R.	Depth	Status
Union Oil, No. 1 Austin, Dominguez, Los Angeles	32- 3-13	7,480	O.S. drlg.
Union Oil, No. 2 Austin, Dominguez, Los Angeles	29- 3-13	7,092	sd. sh. drlg.
Union Oil, No. 14 Carson, Dominguez, Los Angeles	33- 3-13	6,759	sd. sh. drlg.
Shell Oil, No. 104 Reyes, Dominguez, Los Angeles	33- 3-13	6,870	sd. sh. drlg.
Havenstrite, R. E., No. 3 Larronde, Dominguez, L.A.	32- 3-13	7,542	O.S. drlg.
Seaport Oil, No. 1 Dasteel, Dominguez, Los Angeles	32- 3-13	7,948	gr. sd. drlg.
Wood-Mellon Oil, No. 1 West, Dominguez, L. Ang.	31- 3-13	1,000	sd. sh. drlg.
Mission Oil, No. 1 Pierce, Rosecrans, Los Angeles	20- 3-13	7,170	sd. sh. drlg.
So. Cal. Pet., No. 2 Slabaugh, Rosecrans, L. Angeles	20- 3-13	7,585	flow 234 b.d.
So. Cal. Pet., No. 2 Rowena, Rosecrans, L. Angeles	19- 3-13	2,164	sd. sh. drlg.
St. Anthony Oil, No. 3 Gordon, Rosecrans, L. Ang.	19- 3-13	7,750	recmtd. 7,314
Union Oil, No. 40 Rosecrans, Rosecrans, L. Angeles	19- 3-13	8,118	flow 80 b.d.
Union Oil, No. 41 Rosecrans, Rosecrans, L. Angeles	19- 3-13	7,950	flow 260 b.d.
Howard Oil, No. 2 Byrens, Rosecrans, Rosecns, L.A.	20- 3-13	7,650	completing
Chicago Oil, No. 1 Founders, Rosecrans, L. Angeles	20- 3-13	7,220	sd. sh. drlg.
Thorley Oil, No. 1 Athens, Rosecrans, Los Angeles	7- 3-13	5,430	sd. sh. drlg.
Inca Oil, No. 1 Union, Rosecrans, Los Angeles	7- 3-13	7,016	will deepepn
El Rey Oil, No. 1 Westmore, Athens, Los Angeles	2- 3-14	9,063	P.B. 9,000
Federal Oil, No. 1 Smith, Inglewood, Los Angeles	7- 2-14	5,767	sd. sh. drlg.
Turf Oil, No. 1 H.R.A., Potrero, Los Angeles	34- 2-14	8,201	sd. sh. drlg.
Tide Water A. O., No. 14 Porter, Aliso Canyon, L.A.	27- 3-16	1,067	sd. sh. drlg.
Tide Water A. O., No. 15 Porter, Aliso Canyon, L.A.	27- 3-16	3,003	sd. sh. drlg.
Tide Water A. O., No. 22 Porter, Aliso Canyon, L.A.	27- 3-16	2,594	sd. sh. drlg.
Brit. Amer. Oil, No. 1 Perkins, Newhall, L. Angeles	14- 3-16	4,790	sd. sh. drlg.
Creighton-Harmon Synd., No. 1 C-H, Newhall, L.A.	17- 3-16	191	idle
Barnsdall Oil, No. 9 R.S.F., Newhall, Los Angeles	27- 4-17	7,195	P.B. 7,120
Barnsdall Oil, No. 10 R.S.F., Newhall, Los Angeles	26- 4-17	7,240	flow 250 b.d.
Barnsdall Oil, No. 11 R.S.F., Newhall, Los Angeles	26- 4-17	3,293	sd. sh. drlg.
General Pet., No. 2 P.E., Wilmington, Los Angeles	35- 4-13	4,120	P.B. 3,790
Bernstein, Simon, No. 16 Harbor, Wilmington, L. A.	35- 4-13	1,184	sd. sh. drlg.
Continental Corp., No. 3 L.A.C.F.C., Wilm., L. A.	2- 5-13	3,044	flow 590 b.d.
Continental Corp., No. 6 L.A.C.F.C., Wilm., L. A.	2- 5-13	2,172	sd. sh. drlg.
Hamarson Oil, No. 3 Harbor, Wilmington, L. Ang.	35- 4-13	2,094	sd. sh. drlg.
Long Beach Dev., No. 12-W Harbor, Wilm., L. A.	10- 5-13	3,948	completing
Long Beach Dev., No. 13-W Harbor, Wilm., L. A.	3- 5-13	2,594	sd. sh. drlg.
Long Beach Dev., No. 14-W Harbor, Wilm., L. A.	10- 5-13	2,172	sd. sh. drlg.
M. A. K. Pet., No. 2 Harbor, Wilmington, L. Angeles	35- 4-13	2,462	sd. sh. drlg.
Power, E. D., No. 17 Harbor, Wilmington, L. Ang.	35- 4-13	3,199	sd. sh. drlg.
Union Pacific R. R., No. 135, Wilmington, L. Ang.	4- 5-13	5,610	run tubing
Union Pacific R. R., No. 138, Wilmington, L. Ang.	3- 5-13	3,990	sd. sh. drlg.
Union Pacific R. R., No. 139, Wilmington, L. Ang.	3- 5-13	5,420	flow 265 b.d.
Union Pacific R. R., No. 140, Wilmington, L. Ang.	4- 5-13	4,791	sd. sh. drlg.
Union Pacific R. R., No. 141, Wilmington, L. Ang.	3- 5-13	3,837	flow 3,550 b.d.
Union Pacific R. R., No. 142, Wilmington, L. Ang.	3- 5-13	2,750	sd. sh. drlg.
Union Pacific R. R., No. 143, Wilmington, L. Ang.	3- 5-13	1,685	sd. sh. drlg.
Union Pacific R. R., No. 145, Wilmington, L. Ang.	3- 5-13	2,706	sd. sh. drlg.
Union Pacific R. R., No. 25-E, Wilmington, L. Ang.	3- 5-13	2,598	sd. sh. drlg.
Kern Oil, No. 25 Monterey, Montebello, L. Angeles	2- 2-12	7,659	cleaning out
Kern Oil, No. 31 Monterey, Montebello, L. Angeles	2- 2-12	7,740	will deepepn
Kern Oil, No. 42 Monterey, Montebello, L. Angeles	2- 2-12	2,982	sd. sh. drlg.
Kern Oil, No. 5 Mulholland, Montebello, L. Angeles	2- 2-12	7,770	completing
Kern Oil, No. 3 Eggleston, Montebello, L. Angeles	2- 2-12	7,800	completing
Chemical Oil, No. 1 Chemiculture, Montebello, L. A.	12- 2-12	5,493	sd. sh. drlg.
Columbia Oil, No. 1 Schelnik, Montebello, L. Angeles	3- 2-12	8,154	redrlg. 7,656
Montebello Oil, No. 2 Wallace, Montebello, L. Ang.	3- 2-12	7,607	cmtd. 7,603
Mont. Reservoir Oil, No. 1 Mont., Montebello, L. A.	2- 2-12	7,637	will deepen
Mont. Reservoir Oil, No. 2 Mont., Montebello, L. A.	2- 2-12	7,746	flow 170 b.d.
Texas Co., No. 4 Wilcox, Montebello, Los Angeles	3- 2-12	7,476	fish D.P.
Allied Pet., No. 34 Signal, Long Beach, L. Angeles	30- 4-12	10,640	swabbing
Dormax Oil, No. 2 Signal, Long Beach, L. Angeles	30- 4-12	4,960	sd. sh. drlg.
Exeter Oil, No. 3 Olson, Long Beach, Los Angeles	19- 4-12	4,597	rig to pump
Hilldon Oil, No. 2 Flood Control, Long Beach, L.A.	11- 4-13	4,591	sd. sh. drlg.
Cal-Mac Oil, No. 3 Oil Exchange, Long Beach, L. A.	19- 4-12	3,365	sd. sh. drlg.
Mitchell Oil, No. 1 R.B., Long Beach, Los Angeles	19- 4-12	4,250	sd. sh. drlg.
Bush, S. C., No. 3 Exchange, Long Beach, L. Ang.	30- 4-12	1,385	sd. sh. drlg.
Tucker, H. M., No. 1 Heath, Buena Park, Orange	34- 3-11	6,598	sd. sh. drlg.
Bartholomae Oil, No. 9 Stern, East Coyote, Orange	22- 3-10	5,050	sd. sh. drlg.
Standard Oil, No. 69 Emery, West Coyote, Orange	24- 3-11	5,780	flow 585 b.d.
Southwest Expl., No. 27 State, Hunt. Beach, Orange	10- 6-11	5,070	pump 763 b.d.
Southwest Expl., No. 29 State, Hunt. Beach, Orange	10- 6-11	1,893	sd. sh. drlg.
Standard Oil, No. 41 Bolsa, Hunt. Beach, Orange	34- 5-11	2,281	sd. sh. drlg.
Owens & Baker, No. 1 Newland, Hunt. Beach, Orng.	12- 6-11	4,005	gr. sh. drlg.
Termo Co., No. 409-4 State, Hunt. Beach, Orange	10- 6-11	4,719	will redri.
Bolsa Chica Oil, No. 6 Wilson, Hunt. Beach, Orange	10- 6-11	1,997	sd. sh. drlg.
South Basin Oil, No. 93 H.S., Hunt. Beach, Orange	2- 6-11	7,590	redrlg. 3,995
Continental Oil, No. 43 Bixby, Seal Beach, Orange	11- 5-12	4,430	sd. sh. drlg.
United Oil, No. 1 Schimming, Stanton, Orange	25- 4-11	8,980	gr. sd. drlg.
Thompson, M. N., No. 1 Flat, Costa Mesa, Orange	9- 6-10	5,645	sd. sh. drlg.

IMPORTANT WELLS AND NORTHERN CALIFORNIA WILDCATS

Company, well, location and county—	S.T.R.	Depth	Status
Cole, F. E., No. 1 Giacomini, Santa Maria, S. Barb.	24-10-35	4,806	recmtd. 4,640
Union Oil, No. 1 Pezzoni, Betteravia, S. Barbara	33-10-35	2,283	schist; abd.
Union Oil, No. 22 Squires, Santa Maria, S. Barbara	26- 9-34	933	sd. sh. drlg.
Oil Group, Inc., No. 1 Hyland, Summerland, S. Barb.	16- 4-26	2,330	resume work
Petrol Corp., No. 3-15 Tognazzini, Gato Ridge, S. B.	15- 8-32	1,997	sd. sh. drlg.
El Rancho Oil, No. 4 Elkins, Shiells Canyon, Vent.	9- 3-19	320	sd. sh. drlg.
Santa Clara Oil, No. 1 Well, Shiells Canyon, Ventura	3- 3-19	1,001	sd. sh. drlg.
Texas Co., No. 139 Shiells, Shiells Canyon, Ventura	4- 3-19	2,612	pump 25 b.d.
Rio Hondo Oil, No. 1 Cosby, Hopper Canyon, Vent.	14- 4-19	1,248	sd. sh. drlg.
G. E. Dev., No. 7 Hill, Hopper Canyon, Ventura	13- 4-19	780	sd. sh. drlg.
Merchants Pet., No. 8 Cochran, Sespe, Ventura	1- 4-20	2,392	sd. sh. drlg.
Continental Oil, No. 16 Grubb, San Miguelito, Vent.	24- 3-24	6,360	sd. sh. drlg.
C. C. M. Oil, No. 35-B Hobson, Rincon, Ventura	16- 3-24	3,791	sd. sh. drlg.
C. C. M. Oil, No. 9-A Hobson, Rincon, Ventura	15- 3-24	6,515	flow 70 b.d.
Tide Water A. O., No. 7 V.L.W., Vent. Ave., Ventura	23- 3-23	7,140	mill. liner
Tide Water A. O., No. 38 V.L.W., Vent. Ave., Vent.	25- 3-23	....	rigging up
Tide Water A. O., No. 46 V.L.W., Vent. Ave., Vent.	24- 3-23	5,997	sd. sh. drlg.
Tide Water A. O., No. 17 McGonigle, Vent. A., Vent.	23- 3-23	9,294	sd. sh. drlg.
Tide Water A. O., No. 119 Lloyd, Vent. Ave., Vent.	27- 3-23	9,180	tested wet
Tide Water A. O., No. 22 Hartman, Vent. Ave., Vent.	22- 3-23	7,791	sd. sh. drlg.
Tide Water A. O., No. 25 Hartman, Vent. Ave., Vent.	22- 3-23	6,655	sd. sh. drlg.
Shell Oil, No. 116 Taylor, Ventura Ave., Ventura	29- 3-23	6,670	sd. sh. drlg.
Shell Oil, No. 117 Taylor, Ventura Ave., Ventura	21- 3-23	8,098	sd. sh. drlg.
Shell Oil, No. 118 Taylor, Ventura Ave., Ventura	29- 3-23	7,653	completing
Cal. Alliance Pet., No. 2 Hartman, Vent. Ave., Vent.	22- 3-23	9,425	P.B. 8,200
Cal. Alliance Pet., No. 1 Schmidt, Vent. Ave., Vent.	21- 3-23	7,784	sd. sh. drlg.
British American Oil, No. 1 Barn., Vent. Ave., Vent.	22- 3-23	6,981	sd. sh. drlg.
British American Oil, No. 10 Hart., Vent. Ave., Vent.	21- 3-23	5,392	sd. sh. drlg.
Lloyd Corp., No. 5 Dabney, Ventura Ave., Ventura	24- 3-23	6,388	sd. sh. drlg.
Standard Oil, No. 1 Rideout, Delano gas field, Kern	34-24-23	2,460	will deepen
Trico Oil & Gas, No. 3 Tulare, Delano gas field, Kern	27-24-23	2,509	24,000 M.c.f.
North Kern Oil, No. 1 Ranch, Fowler, Kern	16-25-22	4,160	sd. sh. drlg.
General Pet., No. 1 K.P.C., Lost Hills, Kern	16-26-22	4,691	sd. sh. drlg.
Franco-Western Oil, No. 19 Front, McKittrick, Kern	8-30-22	981	cleaning out
Freda Oil, No. 3 Laymore, McKittrick, Kern	20-30-22	1,099	O.S. drlg.
Union Oil, No. 1 Weston, Belridge, Kern	13-29-21	7,486	dry; abd.
Belridge Oil, No. 7-1 fee, North Belridge, Kern	1-28-20	4,982	sd. sh. drlg.
Belridge Oil, No. 10-1 fee, North Belridge, Kern	1-28-20	5,983	sd. sh. drlg.
Continental Oil, No. 4 Result, North Belridge, Kern	36-27-20	6,478	sd. sh. drlg.
Tide Water A. O., No. 33-21 Bel., N. Belridge, Kern	21-27-20	4,365	sd. sh. drlg.
Texas Co., No. 1 Theta, Shale Hills, Kern	12-28-19	3,395	redrlg. 2,088
Bishop Oil, No. 3 Buchner, Mount Poso, Kern	20-26-28	1,605	rig. to pump
Dick & Dore Oil, No. 31 Kern, Kern River, Kern	34-28-28	668	pump 5 b.d.
Hast Oil, No. 9 Kern, Kern River, Kern	34-28-28	165	sd. sh. drlg.
Helm & Smith, No. 20 Kern, Kern River, Kern	34-28-28	630	O.S. drlg.
Helm & Smith, No. 22, Kern, Kern River, Kern	34-28-28	650	pump 5 b.d.
Crestmont Oil, No. 3 Coffee, Round Mtn., Kern	8-28-29	1,422	will P.B.
Grizzly Bear Oil, No. 4 Kelly, Round Mountain, Kern	6-28-29	1,815	cleaning out
Monterey Expl., No. 15 Shell-Duff, Edison, Kern	15-30-29	1,731	rig to pump
Gooden, Fred, No. 1 Needham, Edison, Kern	21-30-29	3,398	sd. sh. drlg.
Goodrum & Vincent, No. 5 S.P., Edison, Kern	31-29-30	380	sd. sh. drlg.
Universal Consd. Oil, No. 3 Cattani, Arvin, Kern	15-31-29	1,886	sd. sh. drlg.
Morton, L. C., No. 1 Jewett, Arvin, Kern	23-31-29	6,766	P.B. 6,680
Western Gulf Oil, No. 45-B, KCL, Fruitvale, Kern	22-29-27	10,590	redrld. 4,410
Standard Oil, No. 5 Mushrush, Wasco, Kern	7-27-24	6,425	sd. sh. drlg.
Pacific Western Oil, No. 1 Meyer, Wasco, Kern	7-27-24	4,998	sd. sh. drlg.
Union Oil, No. 45-34, KCL, Rio Bravo, Kern	34-28-25	10,291	sd. sh. drlg.
Union Oil, No. 54-34, KCL, Rio Bravo, Kern	34-28-25	11,474	flow 2,280 b.d.

KEY TO ABBREVIATIONS USED IN DRILLING REPORTS

Abd., abandoned.
Acd., acidized.
B.O., barrels of oil.
B.P.D., barrels per day.
B.D., barrels daily.
B.P., back pressure.
B.R., building rig.
B. ck., bottom choke.
Br. sh., brown shale.
B.S., basic sediment.
C.&P., cellar and pits.
Cd. or Crd., cored.
C.D., correct depth.
Cg., coring.
Cmtd., cemented.
C.O., cleaning out.
Comp., completed.
Compr., compressor.
C.P., casing pressure, also cement through perforations.
Csg., casing.
D.D., drilling (or drilled) deeper.
Drlg., or Drg., drilling.
Drk. or Dk., derrick.
D.S., drill stem.
D.S.T., drill-stem test.
D.P., drill pipe.
D.&A., dry and abandoned.
Fsg., fishing.
Gbo., gumbo.
G.I., gas injection.
Gr., gravity.
Gr. sd., gray sand.
Grn. sh., green shale.
Hd. sd., hard sand.
H.F.W., hole full of water.
I.P., initial production.
L., lime.
Lnr., liner.
Loc., location.
M.I.M., moving in material.
M.I.R., moving in rig.
M.I.R.T., moving in rotary tools.
M.O.T., milling on tools.
O.I.H., oil in hole.
O.S., oil sand.
O.T.D., old total depth.
O.W.D.D., old well drilling deeper.
O.W.P.B., old well plugging back.
P.B., plugging back.
P.B.P., pulling or pulled big pipe.
P.L., pipe line.
P.L.O., pipe-line oil.
Pmpg., pumping.
P.O.P., putting on pump.
P.P., pulled pipe.
Rd. sd., red sand.
Rd. sh., red shale.
Recmt., recemented.
Recvd., recovered.
Rmg., reaming.
Redrlg., redrilling.
Rng., running.
R.O.G., rig on ground.
R.P., rock pressure.
R.U., rigging up.
R.U.R., rigging up rotary.
R.U.S.T., rigging up standard tools.
R.&T., rods and tubing.
S. or Sd., sand.
S.D., shut down.
Sdy. sh., sandy shale.
Sdtrk. or St., sidetracked.
S.D.P.L., shut down for pipe line.
S.D.O., or S.D.W.O., shut down awaiting orders.
S.G., show gas.
Sh.&L., shale and lime.
S.I., shut in.
S.I.P., shut in, prorated.
S.L.M., steel-line measurement.
S.O., show oil.
S.O.G.&W., show of oil, gas, and water.
Spdg. or Spd., spudding.
S.R., straightreaming.
Stdg., standardizing (also standing).
S.W., salt water.
Swbg., swabbing.
T.A., temporarily abandoned.
Tbg., tubing.
T.D., total depth.
T. ck., top choke.
T.P., tubing pressure.
Tr., tract.
Tstd., tested.
U.R., underreaming.
W.I.H., water in hole.
W.O., workover.
W.O.C. or W.O.C.S., waiting on cement to set.
W.O.O., waiting on orders.
W.P., working pressure.
W.S.O., water shutoff.
W.S.O.O.K., water shutoff O.K.
W.S.R. or W.O.S.R., awaiting standard rig.
Wtr., water.

Union Oil, No. 56-34, KCL, Rio Bravo, Kern	34-28-25	....	rigging up
Union Oil, No. 63-34, KCL, Rio Bravo, Kern	34-28-25	9,030	sd. sh. drlg.
Superior Oil, No. 3-1 Osborn, Rio Bravo, Kern	28-28-25	9,191	sd. sh. drlg.
Superior Oil, No. 3 Burner, Rio Bravo, Kern	27-28-25	11,239	O.S. drlg.
Supeprior Oil, No. 1 Merriil, Greeley, Kern	1-29-25	10,970	sd. sh. drlg.
Superior Oil, No. 1 Brandt, Greeley, Kern	28-29-26	8,090	sd. sh. drlg.
Standard Oil, No. 11-22, KCL, Greeley, Kern	18-29-26	9,672	sd. sh. drlg.
Standard Oil, No. 12-8, KCL, Greeley, Kern	7-29-26	11,510	flow 3,264 b.d.
Standard Oil, No. 12-9, KCL, Greeley, Kern	7-29-26	8,493	sd. sh. drlg.
General Pet., No. 1 Oughton, Greeley, Kern	12-29-25	11,369	O.S. drlg.
General Pet., No. 2 Sullivan, Greeley, Kern	12-29-25	11,395	flow 1,250 b.d.
Shell Oil, No. 38-20-A, KCL, Ten Section, Kern	20-30-26	8,152	O.S. drlg.
Shell Oil, No. 38-21-B, KCL, Ten Section, Kern	21-30-26	8,205	sd. sh. drlg.
Shell Oil, No. 41-31-B, KCL, Ten Section, Kern	31-30-26	8,220	flow 2,960 b.d.
Shell Oil, No. 86-12-B, KCL, Strand, Kern	12-30-25	8,499	completing
Ohio Oil, No. 19-E, KCL, Canal, Kern	13-30-25	8,307	P.B. 8,247
Richfield Oil, No. 18-28-A, KCL, Tupman, Kern	28-30-25	6,997	sd. sh. drlg.
Richfield Oil, No. 58-28-A, KCL, Tupman, Kern	28-30-25	7,896	sd. sh. drlg.
Richfield Oil, No. 78-30-A, KCL, Tupman, Kern	30-30-25	7,964	sd. sh. drlg.
Richfield Oil, No. 72-32-A, KCL, Tupman, Kern	32-30-25	7,155	sd. sh. drlg.
Richfield Oil, No. 14-33-A, KCL, Tupman, Kern	33-30-25	4,967	sd. sh. drlg.
Richfield Oil, No. 18-33-A, KCL, Tupman, Kern	33-30-25	8,195	sd. sh. drlg.
Richfield Oil, No. 34-33-A, KCL, Tupman, Kern	33-30-25	7,240	sd. sh. drlg.
Richfield Oil, No. 52-33-A, KCL, Tupman, Kern	33-30-25	6,428	fish D.P.
Richfield Oil, No. 54-33-A, KCL, Tupman, Kern	33-30-29	7,780	sd. sh. drlg.
Richfield Oil, No. 34-28-A, KCL, Tupman, Kern	29-30-25	6,978	sd. sh. drlg.
Richfield Oil, No. 38-29-A, KCL, Tupman, Kern	29-30-25	1,992	sd. sh. drlg.
Richfield Oil, No. 276-29-A, KCL, Tupman, Kern	29-30-25	8,515	sd. sh. drlg.
Richfield Oil, No. 78-28-B, KCL, Cole's Levee, Kern	28-30-25	5,654	sd. sh. drlg.
Richfield Oil, No. 54-4-B, KCL, Cole's Levee, Kern	4-31-25	8,280	sd. sh. drlg.
Standard Oil, No. 20-6, KCL, Cole's Levee, Kern	9-31-25	8,302	sd. sh. drlg.
Ohio Oil, No. 8-F, KCL, Cole's Levee, Kern	11-31-25	9,490	cmtd. 9,419
Ohio Oil, No. 9-F, KCL, Cole's Levee, Kern	3-31-25	3,635	sd. sh. drlg.
Foster, Robert, No. 1 Hollingsworth, Mid.-Sun., Kern	22-32-23	1,840	sd. sh. drlg.
Signal Oil & Gas, No. 8 Kendon, Midway-Sunset, Kn.	35-32-23	1,266	O.S. drlg.
Shell Oil, No. 45-9 B.V.A., Midway-Sunset, Kern	9-32-25	12,027	hd. sd. drlg.
McDonald, Joseph, No. 20 Midway, Mid.-Sun., Kern	26-31-22	1,532	O.S. drlg.
Ohio Oil, No. 43-3-B, KCL, Paloma, Kern	3-32-26	10,361	fish D.P.
Western Gulf-Texas Co., No. 74-3-A, KCL, Pal., Kern	3-32-26	10,700	recmtd. 10,052
Oil Scout, Inc., No. 1 Tejon, Comanche Point, Kern	27-32-29	6,692	sd. sh. drlg.
Richfield Oil, No. 1 Ranch, Tejon Ranch, Kern	2-10-19	5,750	sd. sh. drlg.
Richfield Oil, No. 2 KCL, Wheeler Ridge, Kern	28-11-20	2,085	hd. sd. drlg.
Erickson & Swanson, No. 2 Gravender, Kngsbg., F.	22-16-22	696	idle
Logan, J. E., No. 44 Yearout, Cantua, Fresno	26-16-14	5,290	sd. sh. drlg.
Jergins Trust, No. 1 Cheney, Panoche Creek, Fresno	29-14-13	9,141	sd. sh. drlg.
Texas Co., No. 1 S.P., Turk Anticline, Fresno	23-17-15	10,116	recmtd. 9,107
Shell Oil, No. 45-2, East Coalinga, Fresno	2-20-15	3,745	completing
Standard Oil, No. 53-19-B fee, N.E. Coalinga, Fresno	19-19-16	8,275	testing
Standard Oil, No. 68-19-B fee, N.E. Coalinga, Fresno	19-19-16	8,090	coring
Standard Oil, No. 77-19-B fee, N.E. Coalinga, Fresno	19-19-16	4,952	sd. sh. drlg.
Standard Oil, No. 82-19-B fee, N.E. Coalinga, Fresno	19-19-16	7,960	sd. sh. drlg.
Standard Oil, No. 86-19-B fee, N.E. Coalinga, Fresno	19-19-16	4,971	sd. sh. drlg.
Amerada Pet., No. 1-20-B Ewing, N.E. Coal., Fresno	20-19-16	8,203	fish packer
Texas Co., No. 5-20-B Kimberlin, N.E. Coal., Fresno	20-19-16	8,205	flow 1,790 b.d.
Superior Oil, No. 5 Husong, N.E. Coalinga, Fresno	18-19-16	8,075	O.S. drlg.
Pure Oil, No. 44-30-B Schwinn, N.E. Coal. Fresno	30-19-16	7,560	br. sh. drlg.
Wilshire Oil, No. 62-30-B, N.E. Coalinga, Fresno	30-19-16	7,993	br. sh. drlg.
Bandini Pet., No. 71-30-B, N.E. Coalinga, Fresno	30-19-16	7,360	sd. sh. drlg.
Lytle, R. S., Agent, No. 68-18-F, S.E. Coal., Fresno	18-20-16	7,522	will deepen
Lytle, R. S., Agent, No. 77-18-F, S.E. Coal., Fresno	18-20-16	6,370	sd. sh. drlg.
Lytle, R. S., Agent, No. 82-18-F, S.E. Coal., Fresno	18-20-16	4,352	sd. sh. drlg.
Univ. Consd. Oil, No. 72-24-C, S.E. Coalinga, Fresno	24-20-15	6,787	sd. sh. drlg.
Standard Oil, No. 68-13-C fee, S.E. Coalinga, Fresno	13-20-15	6,280	sd. sh. drlg.
Standard Oil, No. 88-13-C fee, S.E. Coalinga, Fresno	13-20-15	7,365	sd. sh. drlg.
Standard Oil, No. 22-17-F fee, S.E. Coalinga, Fresno	17-20-16	7,020	sd. sh. drlg.
Standard Oil, No. 1-19-F fee, S.E. Coalinga, Fresno	19-20-16	7,005	br. sh. drlg.
Standard Oil, No. 51-19-F fee, S.E. Coalinga, Fresno	19-20-16	4,262	sd. sh. drlg.
Superior Oil, No. 3-B Cagle, S.E. Coalinga, Fresno	6-20-16	8,035	O.S. drlg.
Union Oil, No. 9 King, Kettleman N. Dome, Fresno	29-21-17	9,950	sd. sh. drlg.
K. N. D. A., No. 322-18-J, Kettleman N. Dome, Fres.	18-21-17	8,494	sd. sh. drlg.
K. N. D. A., No. 23-20-J, Kettleman N. Dome, Fresno	20-21-17	7,740	br. sh. drlg.
K. N. D. A., No. 36-20-J, Kettleman N. Dome, Fresno	20-21-17	8,700	cut. casing
K. N. D. A., No. 4-16-Q, Kettleman N. Dome, Fresno	16-22-18	8,250	swabbing
K. N. D. A., No. 27-26-Q, Kettleman N. Dome, Fresno	26-22-18	5,566	sd. sh. drlg.
K. N. D. A., No. 38-26-Q, Kettleman N. Dome, Fresno	26-22-18	7,724	flow 457 b.d.
K. N. D. A., No. 58-26-Q, Kettleman N. Dome, Fresno	26-22-18	6,681	br. sh. drlg.
Standard Oil, No. 321-29-J, Kettleman N. Dome, Fres.	29-21-17	10,476	reaming
Standard Oil, No. 334-29-J, Kettleman N. Dome, Fres.	29-21-17	9,260	sd. sh. drlg.
Tide Water A. O., No. 35-22 Daniel, Trico, Tulare	22-24-23	464	sd. sh. drlg.
Cal. Fuel Oil, Inc., No. 3 Alberta, Huasna, S. L. Ob.	5-32-13	2,480	sd. sh. drlg.
Superior Oil, No. 1 Tar Springs, Huasna, S. L. Ob.	24-32-14	923	sd. sh. drlg.
Calaveras Cement, No. 1 Elliott, Rio Vista, Solano	30- 4- 3	4,135	22,750 M.c.f.

OKLAHOMA

Week Ended May 25

NORTHERN OKLAHOMA

Beckham County

Fred Coogan's No. 1 Kinchen, SE SE SE Sec. 4-9-25w. Dolo. 3,260 ft.; T.D. 3,714 ft.; P.B. 3,698 ft.; F. oil and wtr.; ran tbg. and dlcd.

Caddo County

Sinclair Prairie Oil Co.'s No. 1 Groman, SW NW NW Sec. 1-16-13w. Wlx. 9,179 ft.; sd. 10,074 ft.; cd. 10,871-75 ft.; N. S.; Arb. 10,922 ft.; T.D. 11,026 ft.; P.B. 9,370 ft.; C.O. at 6,600 ft.; W. 100 ft. blk. O.I.H.; to P.B. to 2,450 ft. and test Pont, cong.

Creek County

D. E. Demsey's No. 1 Marrs, NE NW SE Sec. 29-18-8. Drlg. 500 ft.

Indo Oil Co.'s No. 1 Slick, NW NW NW Sec. 1-16-9. S.O. 1,145-78 ft.: S.D. 2,600 ft., in sh.; to D.D. to Dtchr.

Dewey County

Magnolia Pet. Co.'s No. 1 Fiekes, C SW SW Sec. 31-18-14w. D.S.T. rec. mud at 7,718 ft.; T.D. 9,475 ft.; ran tbg. to 6,463 ft. to cmt. cvgs.: 2,700 lb. P. while S.I.; set plg. 9,200 ft.

Garfield County

Champlin Ref. Co.'s No. 1 Kunkel, C E½ SE NW Sec. 23-23-6w. Lytn. 5,048 ft.; cd. dry 5,057-72 ft.; drlg. ahd.

Hughes County

J. W. Boydston's No. 1 Robstein, C NW SE Sec. 11-6-9. S.D. 1,200 ft.

Hall & Jordan's No. 1-A Barker, SE SE SW Sec. 3-8-9. S.O. in sd. 2,074 ft.; T. D. 2,109 ft.; est. 2 B.O.; S.D.

Morgan-Gulf Prod. Co.'s No. 1 Diamond, C E½ NW SE Sec. 33-9-9. At 3,390 ft. had 1,400 ft. wtr. and 800 ft. O.I.H.; drlg. 3,820 ft.

Kay County

Malarnee Oil Co.'s No. 1 Harris, C SW NE Sec. 14-25-1. Miss. 4,050 ft.; chat with S.O. 4,063-4,105 ft.; wtr. 4,433-40 ft., T.D.; to P.B.

Kingfisher County

Olsen Drlg. Co.'s No. 1 Geis, C NE SW Sec. 15-18-9w; (O.W.D.D.). O.T.D. 8,507 ft.; cd. 9,402 ft.; rec. hd. wtr. sd.; N.S. Phillips Pet. Co.'s No. 1 Grape, C NW SE Sec. 30-18-5w. Layton 5,600 ft.; O.S.W. 4,146 ft.; Miss. 6,670 ft.; D.P. stk.

Kiowa County

Carter's No. 1 Hinton, SE SE SE Sec. 1-7-17w. Drlg. 2,050 ft.

C. H. Marshall's No. 1 Pottchin, NE NW NW Sec. 28-7-18w. S.D. 2,159 ft.

Southwestern Okla. O. & G. Co.'s No. 2 Foltz, NW SE SE Sec. 10-6-18w. T.D. 1,360 ft.; fsg.

Lincoln County

Anderson-Prichard's No. 1 Smith, SE SW NE Sec. 18-15-5. Drlg. 2,410 ft.

Fields & Nagle's No. 1 Alspaugh, SW SE NW Sec. 35-15-6. Drlg. 3,078 ft.

Logan County

Eason Oil Co.'s No. 1 Wells, NE NW NE Sec. 15-16-2w. Drlg. 2,160 ft.

Kerlyn Oil Co.'s No. 1 Cavanaugh, C W½ SW NW Sec. 1-15-4w. Drlg. 4,168 ft.

Kerlyn Oil Co.'s No. 1 Chitwood, NE NE SW Sec. 15-16-4w. Drlg. 5,797 ft.

McIntosh County

Phillips' No. 1 Blankenship, C SW NW Sec. 33-10-13. Hntn. 3,691 ft.; Vla. 3,806 ft.; T.D. 3,809 ft.; U.R.

Muskogee County

R. Garrett's No. 1 Escoe, SW SW SE Sec. 16-13-17. S.D. 1,665 ft.; est. 2,000,000 cu. ft. gas.

Noble County

Heimerich & Payne's No. 1 Fireshoker, SE SE NE Sec. 11-24-3. Drlg. 3,555 ft.

Okfuskee County

Burke-Greis' No. 1 Dew, NE NE NE Sec. 9-12-9. Drlg. 1,925 ft.

McIntyre's No. 1 Richardson, NE SW NW Sec. 19-10-8. T.D. 3,558 ft.; perf. 2,020-60 ft.; N.S.; D.&A.

C. A. Yoakum's No. 1 Long, C SW SE Sec. 34-12-9. T.D. 3,826 ft.; ga. 7,000,000 cu. ft. gas; S.I.

Payne County

Cities Service Oil Co.'s No. 1 Sinnett, SE SE SW Sec. 14-20-4. Drlg. 195 ft.

Comoil-Haskins' No. 1 Meyer, NW SE SE Sec. 17-17-6. Drlg. 2,655 ft.

Devonian Oil Co.'s No. 1-A Scott, SE SE NE Sec. 19-18-5. Miss. 3,698 ft.; R.U. S.T. 3,784 ft.

Pontotoc County

Crescent Oil Co.'s No. 2 Thompson, NE NW SW Sec. 29-3-4. Drlg. 645 ft.

Patterson's No. 1 Isaacs, SW NW NE Sec. 3-4-4. Vla. 2,560 ft.; 1st Wlx. 3,115 ft.; 2nd 3,145-3,220 ft., T.D.; D. &A.

Pottawatomie County

Alma Oil Co.'s No. 1 Harrington, NW qr. NW Sec. 24-9-4. T.D. 4,510 ft.; P.B. 4,430 ft.; F. 175 B.O. in 6 hrs. every 3 days, and dies.

J. F. Smith's No. 1-A McKnown, SE SW NW Sec. 25-8-4. Drlg. 3,958 ft.

Taber et al's No. 1 McKinney, C E½ SE SW Sec. 11-10-4. Hntn. 4,750 ft.; Vla. 4,908 ft.; T.D. 4,970 ft.

Thompson Bros.' No. 1 L. Truesdale, SE SE NW Sec. 31-8-5. Drlg. 1,170 ft.

Seminole County

Elm Oil et al's No. 1 Evans, SE SE NE Sec. 17-10-5. T.D. 4,792 ft.; D.&A.

Murta et al's No. 1 Harber, C W½ NE SE Sec. 4-10-6. Drlg. 3,797 ft.

Washita County

Continental Oil Co.'s No. 1 School ld., C NE Sec. 16-8-16w. Gr. wsh. 3,005 ft. drlg. 6,456 ft.

SOUTHERN OKLAHOMA

Atoka County

Kirksey's No. 1 Baskett, SW SE SE Sec. 7-3s-10e. Sdy. L. 470-80 ft.; S.O.; S.D.; reprs. 600 ft.

Scrivner et al's No. 1 Plettner, NW NW NE Sec. 36-3s-13. Drlg. 1,084 ft.

Choctaw County

Clyde Ross et al's No. 1 Hardy, SE SE NW Sec. 21-7s-15. S.D. 1,950 ft.; T.A.

Comanche County

Jenkins' No. 1 Whitehead, NE cor. Sec. 3-1s-13w. S.D. 505 ft.

W. I. Wynn's No. 1 Lowe, SE NW NW Sec. 7-1n-10w. Est. 15 B.O.P.D.; T.D. 256 ft.

Cotton County

Scott's No. 1 Masonic Home, NW NW SW Sec. 13-4s-13w. Drlg. 254 ft.

Selby O. & G. Co.'s No. 1 Abbott, SW SW NW Sec. 11-5s-12w. Arb. 3,250 ft.; S.D. 3,480 ft.; D.&A.

Marshall County

Johnson et al's No. 1 Godfrey, SW SE NE Sec. 14-6s-6e. Vla. 2,627 ft.; S.S.O T.D. 4,582 ft.; P.B. 3,809 ft.; drlg. 4,703 ft.

May Oil Corp.'s No. 1 Sacrea, SW NE SW Sec. 17-5-5. Sd. and S.G. 1,025-.. ft.; blk. sh. 1,033-37 ft.; gas sd. 1,120-ft.; est. 6,000,000 cu. ft. gas; T.D 1,132 ft.; drld. plug and C.O. to btm.; S.D.

Stephens County

Edwin Bristow's No. 1 Damron, SE NW SW Sec. 25-2s-6w. T.D. 1,545 ft.; P.B. 1,565 ft.; acdz.; rec. S.W.; S.D.

Jackson's No. 1 Marshall, SE NE NE Sec. 1-1s-6w. T.D. 2,575 ft. in sh.; S.D.

Tillman County

Gulf Oil Corp.'s No. 1 Owen, NE NE NE Sec. 27-4s-15w. Drlg. 1,588 ft.

F. W. Johnson's No. 1 Longacre, NE NE SE Sec. 32-25-17w. T.D. 3,268 ft.; F 170 B.O., 30 B.W.P.D.; gr. 42°; drld. cmt. and rec. wtr.; rng. tbg. with pkr. to test.

Kirksey et al's No. 1 Garner, NE SW SE Sec. 24-1n-17w. S.D. 622 ft.; reprs.

KANSAS

Week Ended May 25 (Descriptions are East unless marked otherwise)

Barber County

Sinclair-Prairie Oil Co.'s No. 1 Binning, C S½ SE SW Sec. 26-32-13w. W.O.C. 359 ft.

Barton County

C. L. Carlock's No. 1 Jenke, C W½ NW NW Sec. 7-18-11w. Drlg. 920 ft.

Champlin Ref. Co.'s No. 1 Kasselman, CEL SE NW Sec. 22-20-11w. W.O.C. 222 ft.

Gulf et al's No. 1 Sander, CNL SW SE Sec. 30-13-16w. W.O.C. 215 ft.

Butler County

J. H. Wagoner's No. 1-A Ramsey, SW NW SE Sec. 8-24-5. Pay 2,088-93 ft.; T.D. 2,096 ft.; no test.

Ralph Wixon's No. 3 Bolin, SE SW NE Sec. 1-27-6. Drlg. 2,500 ft.

Cowley County

Barwick & Sheridan's No. 1 Warren, C W½ NW NW Sec. 18-35-6. U.R. 8-in. 1,938 ft.

Foster Oil Co.'s No. 2 Howard, E½ SW SW Sec. 8-34-4. Drlg. 2,200 ft.

McKnab's No. 1 Lemert, CWL NW SE Sec. 11-34-4. Drlg. 497 ft.

McKnab's No. 1 Snyder, C W½ NW NW Sec. 15-34-3. Bart. 3,270-80 ft.; drld. 3,295 ft.

Markey & Mission's No. 1-A Hunt, SW SW NE Sec. 16-34-5. T.D. 1,756 ft.; killed gas; drlg. 2,600 ft.

I. W. Murfin's No. 1 Jervis, N½ SW NE Sec. 19-31-5. Drlg. 1,335 ft.

E. B. Shawver's No. 1-B Widener, C S½ SE NW Sec. 11-30-4. Miss. 2,825-40 ft.; T.D. 3,021 ft.; ran 7-in. lnr. at 3,025 ft.; S.D.

Dickinson County

Midland Oil Co.'s No. 1 Haines, SE SW SW Sec. 23-16-4. Drlg. 1,715 ft.

Douglas County

Kerlyn Oil Co.'s No. 1 Wise, C SE SW Sec. 28-12-20. S.D. 1,452 ft.

Ellis County

Gulf et al's No. 1 Sander, CWL SW SE Sec. 30-13-16w. Tpka. 2,940 ft.; cd. 3,118-23 ft.; S.O.; drlg. 3,345 ft.

Ellsworth County

Aylward Prod. Co.'s No. 1 Haska, CEL SE SE Sec. 6-16-10w. Lans. 2,956 ft.; Arb. 3,273-75 ft., T.D.; R.U.S.T.

Moore's No. 1 Little, C S½ SE NE Sec. 30-16-10w. Drlg. 2,120 ft.

Pryor & Lockhart's No. 1 Stratman, C W½ NW NW Sec. 1-17-10w. Lans. 2,937 ft.; Arb. 3,278 ft.; T.D. 3,297 ft.; comp. for 3,000 B.O.P.D.

Sharon Drlg. Co.'s No. 1 Norotny, C N½ NW NE Sec. 32-16-10w. Arb. 3,292 ft.; S.O. 3,299 ft.; R.U.S.T. 3,308 ft.

Greenwood County

Ashlock et al's No. 2-A Lindemood, NE NW SW Sec. 7-25-13. S.D. 925 ft.

Johnson County

McCain et al's No. 1 Doan, CEL NW SE Sec. 34-12-22. R.U.D.D. 1,433 ft.

Kearny County

Stanolind O. & G. Co.'s No. 1 Judd, C SE SE Sec. 15-21-38w. Drlg. 157 ft.

Kingman County

Gaddis et al's No. 1-A Shannon, CEL SE SW Sec. 11-27-10w. Lans. 3,493 ft.; drlg. 3,880 ft.

McPherson County

Aladdin Pet. Co.'s No. 1 Bitikofer, CNL NE NW Sec. 1-20-1w. Lans. 2,315 ft.. Miss. 2,885 ft.; ga. 3,000,000 cu. ft. gas; F. 4 B.O.P.H.

H. & M. Drlg. Co.'s No. 1 Swenson, S½ SW NE Sec. 9-18-4w. U.R. 2,569 ft.

Marion County

Harrington & Lorieaux's No. 1 Belton, SE SE NE Sec. 30-17-4. Miss. 2,398 ft.; pay 2,412-15 ft.; T.D. 2,420 ft.; P. 800 B.O. in 24 hrs.

H. H. Royer's No. 1 Kroch, NE NE NW Sec. 28-18-4. O.T.D. 2,452 ft.; T.D. 2,464 ft.; in Miss.; N.S.

Pawnee County

Lauck & Moncrief's No. 1 Gilkison, CEL NE SW Sec. 21-22-16w. Lans. 3,641 ft.;

Simp. 4,083 ft.; Arb. 4,105-25 ft., T.D.; N.S.; D.&A.

Phillips County

Cities Service Oil Co.'s No. 1 Ray, NE NW SE Sec. 32-5-20w. Loc.

Reno County

Dutton et al's No. 1 Green, SE SE SE Sec. 8-23-4w. Fsg. 2,622 ft.

Rice County

C. L. Carlock's No. 1 Conrad, C W½ SW NE Sec. 15-20-6w. Lans. 2,850 ft.; drlg. 2,980 ft.

Clyde Pulse's No. 1 Baker, CSL SW SW Sec. 33-20-6w. Drlg. 1,880 ft.

Rooks County

Cities Service Oil Co.'s No. 1 Hansen, SE SE NW Sec. 15-6-19w. Sur.

Mitchell Drlg. Co.'s No. 1 Vererka, CSL SE SE Sec. 21-8-19w. Drlg. 2,455 ft.

Wakefield et al's No. 1 Diehle, C N½ NW NW Sec. 4-9-17w. C.O. 1,317 ft.

Russell County

Cities Service Oil Co.'s No. 1 Rochester, SE SE NE Sec. 11-13-15w. Lans. 2,953 ft.; S.O. 2,997-99 ft., T.D.

Gussman's No. 1 Mudd, CWL NW NE Sec. 16-15-15w. Drlg. 230 ft.

Haynes et al's No. 1 Driscoll, CNL SE SW Sec. 30-15-11w. Drlg. 2,025 ft.

Simpson Oil's No. 1 Rush, CWL NW SW Sec. 33-14-14w. Lans. 2,939 ft.; S.S.O.; Arb. 3,194 ft.; 8 B.W. at T.D. 3,225 ft.; D.&A.

Sedgwick County

G. A. Fuller's No. 1 Stilt, CSL SE NE Sec. 21-27-1w. S.S.O. 2,678 ft.; incr. at 2,798-2,806 ft.; P. 2 B.O. and 20 B.W. P.H.; pot. 23 B.O.; R.U. to D.D.

Schermerhorn Oil Co.'s No. 1 Sanders, NE NW SE Sec. 2-25-2. Miss. 2,835 ft., S.O.; T.D. 2,887 ft.

Woodson County

Cooper's No. 1 Sowder. SE SE NW Sec. 31-25-14. Drlg. 457 ft.

MISSOURI

Holt County

Brin & Nathan's No. 1 Decker, C NW NW Sec. 1-61-38w. H.F.W.; Rng. 8-in. to 1,450 ft.

Macon County

Ray Dorris' No. 1 Jones, NW NW Sec. 16-58-17w. Loc.

Platte County

Roach-Vincent et al's No. 1 Dillingham, C NE SW Sec. 16-53-34w. Set 8-in. csg. 1,063 ft.; drlg. below 1,200 ft.

Schuyler County

T. E. Baldwin's No. 2 Johnson, SW NE NE Sec. 21-65-15w. T.D. 680 ft.; S.D.

IOWA

Fremont County

Oscar Gruber's No. 1 fee, C SW SE Sec. 8-67n-40w. Drlg. below 1,300 ft.

ARIZONA

Cochise County

Funk Benevolent Corp.'s No. 1 fee, SE NE Sec. 27-13s-30e. Fsg. 6,668 ft.; S.S. G.&O.

Pima County

R. W. Schenck's No. 1 Boyce, Sec. 22-19s-17e. S.D. 350 ft.

Yavapai County

Ari-Copa Drlg. & Mining Co.'s No. 1 Puntenney, SW¼ Sec. 27-18n-2w. S.D. 460 ft.

Chino Valley Oil Dev. Co.'s No. 1 State, Sec. 20-18n-2w. S.D. 1,140 ft.

Yuma County

Yuma Valley O. & G. Co.'s No. 1 Musgrove, N½ SW NW NE Sec. 11-11s-25w. Cd. 3,320-30 ft.; good S.O.&G.; R.U. pmp. 4,462 ft.

NEBRASKA

Dakota County

Peder Skriver's No. 1 Armor, NE NE NE Sec. 33-28-8. T.D. 1,100 ft.; S.D.

Pawnee County

Blaser & Hoerman's No. 1 Wilson, NE NW NW Sec. 4-1-10. S.S.O. 470-71 ft.; drlg. 476 ft.

Scotts Bluff County

Albert Wood et al's No. 1 McHenry, SE NE NE Sec. 33-23-57w. T.D. 625 ft.; S.D.

J. A. Fairy Pet.'s No. 1 McCulley, C SE SE Sec. 35-23-58w. S.D. 2,035 ft.

ARKANSAS

Clark County

J. H. Coker and J. P. Grieves' No. 1 C. McClellan, 330 ft. N. and W. cor. NW SE Sec. 11-20-21. S.D. 1,326 ft.; repr. drk.

Coker Oil Corp.'s No. 4 H. H. and H. C. Cabe, 100 ft. E of No. 2, Sec. 5-10s-21w. Set 8¼-in. csg. 20 ft.; reported S.O. 283-87 ft.; S.D.; W.O.; T.D. 480 ft.

W. P. Wilson's No. 1 Hamilton & Mathews, 50 ft. W, C SE NE Sec. 31-10s-20w. S.D. high wtr. 1,622 ft.

Columbia County

Barnsdall Oil Co.'s No. 1 El Dorado & Wesson R. R. Co., C NW SW Sec. 5-19-18. Set 10¾-in. csg. 2,525 ft.; W.O.C.

Mid-Continent Pet. Corp.'s No. 1 J. Keith, C SW NW Sec. 16-18-22. Set 16-in. csg. 397 ft.; drlg. 2,077 ft.

Southwood Oil Co.'s No. 2 H. C. Couch, C S½ SW SW and S½ SE SW Sec. 23-17-20. Drlg. r.&gr. sh. 4,939 ft.

Standard Oil Co.'s No. 1-C Gunnels unit, 660 ft. N, 595 ft. E, SW cor. SE NW Sec. 20-17-19. Set 9⅝-in. csg. 2,173 ft.; T.D. 7,558 ft.; set 6-in. csg. 7,533 ft.; W.O.C.

Tide Water Asso. Oil Co. and Seaboard Oil Co.'s No. 2 C. H. Murphy et al, C SE NE Sec. 14-18-19. Set 9⅝-in. csg. 2,500 ft.; drlg. rd. sdy. sh. 5,963 ft.

Tide Water Asso. Oil Co. and Seaboard Oil Co.'s No. 1 Talley, C SE NW Sec. 14-18-19. Set 9⅝-in. csg. 2,487 ft.; drlg. rd.&gr. sh. 5,727 ft.

G. H. Vaughn's No. 1 J. M. Talley, C N½ N½ SE Sec. 15-18-19. Drlg. rd. sdy. sh. 6,439 ft.

Dallas County

H. H. McBride et al's No. 1 Southern Kraft Corp., C SE SW Sec. 16-2-16. M.I.M.

Faulkner County

Cato Oil Co., Inc.'s No. 1 R. R. Harrell, 330 ft. SE cor. SE SW Sec. 35-4n-12w. T.D. 2,438 ft.; U.R. csg. and set 7-in. csg. 2,370 ft.; bailing to test.

Lafayette County

Atlantic Ref. Co.'s No. 1 Bodcaw Lbr. Co., Sec. 29-17-23. Set 16-in. csg. 341 ft.; set 9⅝-in. 4,222 ft.; cd. 7,308-16 ft.; S.O.; drlg. rd. sdy. sh. 8,640 ft.

East Texas Ref. Co. et al's No. 2 E. P. Davis, 525 ft. N, 660 ft. W, SE cor. NW NE Sec. 19-16-23. Set 5½-in. csg. 3,399 ft.; T.D. 3,480 ft.

J. & J. Oil Co.'s No. 1 J. E. Barnes, 345 ft. W, 615 ft. N, SE cor. Sec. 4-16-24. Set 10¾-in. csg. 218 ft.; drlg. sh.&sd. 1,053 ft.

Lonoke County

Lunnon Howell & Ford's No. 1 City of Cabot, C NE Lot 1, Blk. 6, Sec. 18-4n-9w. Set 4¾-in. csg. 878 ft.; drlg. 1,-146 ft.

J. F. Russell's No. 1 J. T. Gunter, 440 ft. N, 577 ft. W. SE cor. Sec. 17-5n-10w. Drld. sd. S.S.O. 2,231-45 ft.; S.D. 2,312 ft.; installing drlg. line.

Miller County

F. W. Burford's No. 1 Ritchie, 330 ft. N, 1,650 ft. W, SE cor. Sec. 7-20-27. Gloyd pors. 6,088-6,119 ft.; rng. csg. 6,173 ft.

K. E. Jennings and J. J. Oil Co.'s No. 1 H. T. Wood, 520 ft. S, 255 ft. W, NE cor. Sec. 33-18-28. Drlg. L.&sh. 4,217 ft.

Red Iron Drlg. Co.'s No. 1 Philyaw, 330 ft. NW cor. NE SE Sec. 7-17-26. Drlg. 2,589 ft.

Standard Oil Co. of La.'s No. 1 W. P. Sturgis, 660 ft. S and W, C Sec. 1-17-27. Set 9⅝-in. csg. 2,497 ft.; T. Bknr. 8,948 ft.; cg. rd. sh.&anhy. 9,183 ft.

Ouachita County

Sam Richardson & Co., Inc.'s No. 10 J. Goodwin, 200 ft. N, 330 ft. W, SE cor. NE SW Sec. 32-15-15. Drlg. r. sh. 3,-827 ft.

Saline County

A. W. Givens' No. 1 Williams, 375 ft. S, 420 ft. E, NW cor. NE NE Sec. 18-3s-15w. Set 6-in. csg. 500 ft.; S.D. 550 ft.

Tedford Drlg. Co. et al's No. 1 Cunningham, C SW NE Sec. 31-3s-15w. R.U.

Sevier County

R. A. McArthur's No. 1 Bell est., 20 ft. SE cor. SE SW Sec. 29-9s-32w. S.D. 785 ft.

Union County

Berg & Laney's No. 1 Cutrer, 150 ft. N, 660 ft. W, SE cor. NW SW Sec. 21-17-14. Cd. 2,727-28 ft.; rec. 7-in. por. sd.; cd. 2,728-35 ft.; rec. 7½ ft. soft por. sd., salty taste; drlg. by fish 350 ft.; T.D. 3,370 ft.; set 5⅛-in. csg. 2,771 ft.; perf. 2,702-05 ft.; bailed down 1,000 ft. and tstd. S.W.; recmtd. perf. 2,601-03 ft. and reperf. 2,572-74 ft.; T.D. 2,575 ft.; changing to smaller rig.

J. H. Coker and J. P. Grieves et al's No. 1 C. L. Smith, 330 ft. SW cor. NE NW Sec. 32-17-14. Set 10¾-in. csg. 225 ft.; drlg. 1,860 ft.

Fohs Oil Co.'s No. 1-A Grace, 660 ft. N, 330 ft. W, SE cor. SW SE Sec. 31-17-14. T.D. 3,450 ft.; T. sd. 3,436 ft.

Marine Oil Co.'s No. 1-A W. B. Thompson, 250 ft. S, 400 ft. E, NW cor. SW SE Sec. 3-18-13. Tstd. oil 3,005-25 ft., and mud 3,203-23 ft.; set 7-in. csg. 3,-556 ft.; swbd. 50 B.O. and S.S. S.W.; W.O.S.R. 3,590 ft.

Marine Oil Co.'s No. 5-B W. B. Thompson, 250 ft. S, 200 ft. W, NE cor. SE SW Sec. 3-18-13. Set 10-in. csg. 140 ft.; drlg. 2,390 ft.

Phillips Pet. Co.'s No. 1 C. H. Murphy, 165 ft. N, 10 ft. E, NW cor. S½ Lot 2, NW Sec. 19-18-17. Set 9⅝-in. csg. 1,-878 ft.; drlg. 1,898 ft.

LOUISIANA

NORTH LOUISIANA

Bienville Parish

Ark. La. Gas Co.'s No. 1 Wimberly, 661 ft. N, 50 ft. W, C Sec. 15-16-10. Set 9⅝-in. csg. 1,252 ft.; drlg. sh.&L. 3,-592 ft.

Bossier Parish

R. L. Reese et al's No. 1 Bellevue Ld. Co., 170 ft. E, 365 ft. N, C Sec. 27-20-11. Set 10-in. csg. 100 ft.

Triangle Drlg. Co.'s No. 2 Chatman, 1,-977 ft. E, 1,995 ft. S, NW cor. Sec. 18-17-11. Set 5½-in. csg. 3,120 ft.; reset csg.; tstd. S.W.; cmtg. off 3,130 ft.

Caddo Parish

L. M. Calhoun's No. 2 Caddo O. & M. Co., Sec. 12-20-16. Set 10-in. csg. 60 ft.; drlg. sh. 359 ft.

D. T. Cauble's No. 1 Darnell, Sec. 17-22-16. Set 10-in. csg. 80 ft.; sd. 3,002-10 ft. and 3,012-52 ft.; S.O.; T.D. 3,204 ft.; set 5⅛-in. csg.; perf. 3,086-92 ft.; tstd. dry; perf. 3,085-92 ft.; tstg.

Cooper Oil Co.'s No. 2 Stiles, Sec. 33-20-16. Set 6-in. csg. 1,568 ft.; W.O.C. 1,661 ft.

Davidson & Brown's No. 1 Wells, Sec. 10-21-15. Set 8-in. csg. 1,597 ft.; acd. with 4,000 gal.; pmpd.; S.O. 1,789 ft.; T.D. 3,000 ft.; set 5½-in. csg.; acd. with 3,-000 gal.; tstd. S.W.; S.O.; pld. csg. and P.B. 2,006 ft.; tstd. S.W.; P.B. 1,875 ft. and tstd. S.W.; pmpg. S.W.

J. P. Griffin's No. 2 Muslow, Sec. 26-21-16. Set 7-in. csg. 2,250 ft.; T.D. 2,266 ft.; W.O.S.R.

L. Habfass' No. 1-B Knight Oil & Ld. Co., Sec. 1-21-16. Set 10-in. csg. 60 ft.; drlg. sh. 500 ft.

O. K. Hickman's No. 1 Lavine, Sec. 12-20-16. Set 7-in. csg. 1,311 ft.; acd. with 4,000 gal.; tstg. 1,507 ft.

F. G. Holcomb's No. 1 Sims, Sec. 3-20-16. R.U.

C. H. Lyons et al's No. 1 Ferris, 750 ft. N, 30 ft. E, SW cor. Sec. 35-18-14. Set 9-in. csg. 1,213 ft.; drlg. 4,895 ft.

P. N. McCullough's No. 1 Rudderdorf, Sec. 11-20-16. Set 5⅛-in. csg. 1,406 ft. acd. 4,000 gal. and blowing S.W.&S.O.

McDonald & Campbell's No. 15 Youree, Sec. 13-20-15. Drlg. sh.&sd. 1,825 ft.

E. O. Mitchell's No. 1 fee, Sec. 12-20-16. Set 5⅛-in. csg. 1,373 ft.; W.O.C.

Baxter Moody's No. 1 Muslow, Sec. 5-20-15. Set 6⅝-in. csg. 1,414 ft.; W.O.C.

N. W. Pannill's No. 1 Muslow, Sec. 32-21-15. Set 6-in. csg. 1,392 ft.

Providence Oil Co.'s No. 6 Bostwick, Sec. 13-22-16. Set 7-in. csg. 2,624 ft.

Sklar Oil Co.'s No. 1 Cheshire, Sec. 32-21-15. Set 5⅛-in. csg. 1,328 ft.; W.O.C.

Sklar Oil Co.'s No. 2 Hobbs, Sec. 21-21-15. T.D. 1,585 ft.; set 7-in. csg. 1,375 ft.; acd. 3,000 gal.; W.O.S.R.

Stanolind O. & G. Co.'s No. 2 Dorian, Sec. 18-21-15. Set 5½-in. csg. 1,535 ft.; acd. 1,700 ft.; W.O.S.R.

Stanolind O. & G. Co.'s No. 1 Noel est., Sec. 25-21-15. Set 8⅝-in. csg. 64 ft.; set 5½-in. csg. 1,380 ft.; 1,550 ft. W. O.C.

Jack Terrell's No. 1 Welch, Sec. 3-20-16. Set 4½-in. csg. 1,434 ft.; T.D. 1,540 ft. acd. 4,000 gal.; tstd. S.O. and S.W.

Texas Co.'s No. 10 A. Herndon, Sec. 14-21-15. Set 10-in. csg. 42 ft.; T.D. 1,494 ft.; jnkd. hole 1,494 ft.; skd. over 145 ft.; S.W.; set 7-in. csg. 1,490 ft.

Texas Co.'s No. 10 J. F. Herndon, Sec. 14-21-15. Set 6⅝-in. csg. 1,484 ft.; acd. with 4,000 gal.; pmpg. S.W.; S.O. 1,672 ft.

Texas Co.'s No. 5 Lake Front Oil Co., Sec. 8-20-15. Set 6⅝-in. csg. 1,318 ft.; W.O.S.R. 1,491 ft.

Texas Co.'s No. 1 La. Co. fee, Sec. 1-20-16. T.D. 1,672 ft.; tstd. S.W. 1,473 ft.; set short string 5-in. csg. 1,508 ft.

Catahoula Parish

Continental Oil Co.'s No. 1 Tensas, C N½ SW SW Sec. 12-9-7e. Set 10¾-in. csg. 1,120 ft.; drlg. L.&sh. 7,807 ft.

Claiborne Parish

Ohio Oil Co.'s No. 15 G. W. Taylor Acct. 1, 100 ft. S and W, C SE Sec. 15-23-8. Set 13⅜-in. csg. 980 ft.; cg. 4,533 ft.

De Soto Parish

Foster & Smith's No. 1 McRae, 800 ft. S, 550 ft. W, C Sec. 5-12-16. Set 10-in. csg. 60 ft.; W.O.C.

Grant Parish

C. M. Bowers' No. 1 Goodpine Oil Co., C SE SE Sec. 13-9n-1w. T. Wlx. 1,622 ft.; S.W. sd. 1,626 ft.; S.D.; W.O.

John Pundt's No. 1 Reed est., 805 ft. S, 429 ft. W, NE cor. NW SW Sec. 10-7n-3w. Set 16-in. csg. 182 ft.; T. Wlx. 2,374 ft; T.D. 3,153 ft., sd.&sh.; S.D.; W.O.

La Salle Parish

O. K. Allen, Jr., et al's No. 1 Breedlove. C SW NE Sec. 32-11-3e. Set 10¾-in. csg. 100 ft.; drlg. sh. 807 ft.

Ark. Fuel Oil Co.'s No. 1-B Goodpine Oil Co., C NW SW Sec. 18-10n-3e. T. Wlx. 1,590 ft.; oil sd. 2,203-18 ft. and 2,221-39 ft.; set 7-in. csg. 2,335 ft.; W. O.C.

Coon & Ezell's No. 1 Herring, 300 ft. W, 150 ft. S, NE SE SW Sec. 1-8n-3e. S.D. 55 ft.

E. F. Neely's No. 1 Lizendy, 330 ft. NW cor. NE NE Sec. 19-10-3. T. Wlx. 1,600 ft.; br. sh. 2,227-41 ft.; cd. oil sd.; T.D. 2,380 ft.; arng. set csg. to test.

Placid Oil Co.'s No. 16 La. Central, C NW NW Sec. 36-10-2. Set 10¾-in. csg. 105 ft.; cg. 2,120 ft.

Placid Oil Co.'s No. 4 Goodpine, C NE NW Sec. 18-20-3e. O.T.D. 2,242 ft.; set 7-in. csg. 2,435 ft.; Schlmb.; T. Wlx. 1,630 ft.; oil sds. 2,234-50 ft., 2,258-66 ft., and 2,275-91 ft.; perf. 2,258-62 ft.; swbd. oil and S.W.; sqzd.; perf. csg. 2,234-40 ft.; tstg.

Placid Oil Co.'s No. 5 Goodpine, C SE NW Sec. 18-10-3. Set 10¾-in. csg. 99 ft.; cd. oil sd. 2,232-42 ft.; rng. elec. surv. 2,400 ft.

Placid Oil Co.'s No. 10 La. Cent. Lbr. Co., C NW SW Sec. 7-10n-3e. Took side-wall cores 3,880 ft.; set csg. 2,650 ft.; swbd. 7 to 8 B.F.P.H.; 20% S.W.; perf. 2,206-15 ft. and 2,186-92 ft.; tstd. S.O. and S.W.; sqzd. all perf. and reperf. 2,224-28 ft. and flwd. 300 B.F., 50% S.W.; open tbg.; tstg.

Fred Stovall, Tr.'s No. 1 Russell, 200 ft. NW cor. SE SE Sec. 25-10-1e. Set 10-in. csg. 60 ft.; W.O.C.

G. W. Ziegen's No. 17 La. Central, C NW NE Sec. 36-11-2e. R.U.

Red River Parish

J. E. Parham's No. 1 Haynes, 2,192 ft. N, 1,000 ft. E, SW cor. Sec. 20-13-10. 10-in. csg. 135 ft.; set 6-in. csg. 1,060 ft.; T.D. 1,428 ft.; blg. to test.

Sabine Parish

Geo. L. Pace's No. 5 Logan Oil Co., 330 ft. SW cor. SW NW Sec. 26-10-13. Drlg. sh. 1,256 ft.

Roy Raines' No. 1 Carter, NW NW Sec. 27-9-11. T.D. 1,820 ft.; S.D.

Sam Sklar's No. 1 First Natl. Bnk., 330 ft. SW cor. NW SW Sec. 29-8-12. Set 10-in. csg. 63 ft.; set 6-in. csg. 2,171 ft.; blg. to test 2,546 ft.

Sutton Zwolle Oil Co.'s No. 3 Sabine, 1,-650 ft. S, 660 ft. E, NW cor. NE Sec. 23-7-14. S.G. 3,538-60 ft.; jnkd. hole 3,560 ft.; W.O.

Tensas Parish

H. L. Hunt's No. 1 Chicago Mill & Lbr. Co., C NW NW Sec. 30-13-10. Set 10¾-in. csg. 266 ft.; drlg. 1,425 ft.

Union Parish

Interstate Nat. Gas Co.'s No. 97 fee, Sec. 2-21-3. Set 8-in. csg. 790 ft.; drlg. 1,109 ft.

Memphis Nat. Gas Co.'s No. 8 Lankford,

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GIDDENS-LANE BUILDING -:- SHREVEPORT, LA.

Sec. 2-21-3. Set 6-in. csg. 2,141 ft.; W. O.C.
Memphis Nat. Gas Co.'s No. 2 Potts, Sec. 19-21-3e. R.U.
Nemours Corp.'s No. 1 Hollis, Sec. 10-21-3. Set 6-in. csg. 1,986 ft.; W.O.C.

Webster Parish

Hunt Oil Co.'s No. 1 Robt. Scott, C SE SE Sec. 19-21-9. Set 9⅝-in. csg. 5,604 ft.; D sd. 8,523-30 ft. S.S.O. Bodcaw sd. 8,606-49 ft., oil; set csg. 8,710 ft.; W.O.C.
Hunt Oil Co.'s No. 2 Scott, 1,980 ft. N. 50 ft. E, SW cor. Sec. 20-21-9. R.U.
Hunt Oil Co.'s No. 6 E. L. Stewart, 200 ft. NW C NE SE Sec. 30-21-10. Set 9⅝-in. csg. 5,606 ft.; drlg. sh. 5,930 ft.

West Carroll Parish

Hunter Co.'s No. 1 E. Lee unit, 1,980 ft. W, 660 ft. S, NE cor. Sec. 27-20-10. Set 13⅛-in. csg. 223 ft.; T. Monroe gas sd. 2,423 ft.; D.S.T. 2,423-29 ft.; rec. 90 jts. S.W. in 26 min.; drlg. hd. L. 2,617 ft.

SOUTH LOUISIANA FIELDS

Abbeville—Vermilion Parish

Continental Oil Co.'s No. 1 Boudoin, Sec. 64-12s-3e. 13⅜-in. csg. 1,776 ft.; 6-in. csg. 11,100 ft.; drlg. sh. 11,237 ft.

Anse La Butte—St. Martin Parish

Glassell & Glassell's No. 2-A Breaux, Sec. 117-9s-5e. T.D. 4,576 ft.; 7-in. csg. 4,576 ft.
Glassell & Glassell's No. 1 Fortoris, Sec. 122-9s-5e. Loc.
Glassell & Glassell's No. 1 Patin, Sec. 121-9s-5e. T.D. 4,759 ft.; 6-in. csg. 4,745 ft.
Stanolind O. & G. Co.'s No. 1 Bergeron, Sec. 121-9s-5e. R.U.
Stanolind O. & G. Co.'s No. 1 L. D. Bergeron, Sec. 88-9s-5e. T.D. 4,889 ft.; 7-in. csg. 4,850 ft.

Bancroft—Beauregard Parish

Republic Prod. Co.'s No. 18 Columbia, Sec. 15-6s-13w. Loc.
Republic Prod. Co.'s No. 11 Lutcher Moore, Sec. 11-6s-13w. T.D. 7,525 ft.; perf. csg. 7,518-23 ft.; rec. S.W.

Barataria—Jefferson Parish

California Oil Co.'s No. 1 La. Truck & Orange Co., Sec. 15-15s-23e. 10¾-in. csg. 2,011 ft.; S.D. 2,981 ft.
California Oil Co.'s No. 1 Danciger-State, Sec. 2-16s-23e. Loc.
California Oil Co.'s No. 1 Zeringue-Community, Sec. 2-16s-23e. T.D. 8,329 ft.; sd.; abd.
Carter, Perrin & Brian's No. 1 Penniman-Westerfeidt, Sec. 15-15s-23e. R.U.
Carter, Perrin & Brian's No. 2 Ruttley-Wiseman, Sec. 2-16s-23e. R.U.
Geo. Conover's No. 1 Conover Community, Sec. 22-15s-23e. Loc.
Fohs Oil Co.'s No. 1 Conzelman, Sec. 22-15s-23e. Loc.

Baton Rouge—East Baton Rouge Parish

Fm. Helis' No. 9 Nelson, Sec. 36-7s-1w. 7s-1w. Drlg. sh. 6,140 ft.
Wm. Helis' No. 9 Nelson, Sec. 36-7s-1w. Loc.
Sugarfield Oil Co.'s No. 3 Community, Sec. 45-7s-1e. 10¾-in. csg. 1,315 ft.; T. D. 6,814 ft.; 7-in. csg. 6,800 ft.; tstg.
Sugarfield Oil Co.'s No. 2 Reinken, Sec. 46-7s-1e. R.U.

Bayou Blue—Iberville Parish

T. G. Markley and Crosby Drlg. Co.'s Sec. 74-9s-10e. R.U.
T. G. Markley and Crosby Drlg. Co.'s No. 1 Balste, Sec. 74-9s-10e. Cd. O.S. 1,723-51 ft.; 7-in. csg. 1,723 ft.; I.P. 3 B.O.; 800,000 cu. ft. gas P.D.; ¼-in. ck.
Superior Oil Co.'s No. 1 E. B. Schwing, Sec. 73-9s-10e. S.D. 8,340 ft.
Superior Oil Co.'s No. 3 Schwing Lbr. Co., Sec. 74-9s-10e. Loc.

Bayou Choctaw—Iberville Parish

Standard Oil Co. of La.'s No. 2 Cypress Sec. 28-8s-11e. 10¾-in. csg. 2,250 ft.; T.D. 8,609 ft.; S.D.; high wtr.

Bayou des Glaise—Iberville Parish

Humble O. & R. Co.'s No. 3-B Wilberts & Sons, Sec. 78-8s-8e. R.U.

Bayou Pigeon—Iberia Parish

Plymouth Oil Co.'s No. 1 Leblanc, Sec. 13-12s-10e. Dredge canal.

Bayou des Allemands—La Fourche Parish

Amerada Pet. Corp.'s No. 4 Gheens Realty, Sec. 56-15s-20e. Drlg. sh. 1,530 ft.

Bay St. Elaine—Terrebonne Parish

Jefferson Lake Sulphur Co.'s No. 1 Salt Dome Royalties, Sec. 8-22s-18e. Loc.

Caillou Island—Terrebonne Parish

Texas Co.'s No. 13 State, Sec. 20-23s-20e. Drlg. sd. 4,736 ft.
Texas Co.'s No. 68 State, Sec. 17-23s-20e. Drlg. sh. 6,355 ft.

Cameron Meadows—Cameron Parish

Magnolia Pet. Co.'s No. 28 Cameron Meadows, Sec. 21-14s-13w. Cg. sd.& sh. 5,756 ft.

Chacahoula—La Fourche Parish

Sun Oil Co.'s No. 2 Cypress, Sec. 75-15s-15e. 13⅜-in. csg. 1,815 ft.; drlg. sh. 4,967 ft.
Sun Oil Co.'s No. 8 Dibert, Stark & Brown Cypress Co., Sec. 70-15s-15e. 10¾-in. csg. 1,831 ft.; drlg. sd.&L. 5,647 ft.

Chalkley Field—Cameron Parish

Humble O. & R. Co.'s No. 9 Hanzen, Sec. 9-12s-6w. Drlg. sh. 7,961 ft.
Shell Oil Co., Inc.'s No. 1 Coastal Club. T.D. 10,100 ft.
Shell Oil Co., Inc.'s No. 7-A Hanzen, Sec. 20-12s-6w. T.D. 8,943 ft.; 5-in. csg. 8,943 ft.; P.B. 8,936 ft.; I.P. 121 B.P. D.; ¼-in. ck.

Cheneyville—Rapides Parish

Amerada Pet. Corp.'s No. 9 Well, Sec. 54-1s-2e. T.D. 5,755 ft.; 5½-in. csg. 5,754 ft.; I.P. 98 bbl. in 19 hrs.; 7/16-in. ck.
Amerada Pet. Corp.'s No. 10 Well, Sec. 53-1s-2e. Cg. sd. 5,701 ft.
S. W. Richardson's No. 13 Well, Sec. 55-1s-2e. Drlg. sh. 3,300 ft.

Darrow—Ascension Parish

Humble O. & R. Co.'s No. 29 Community, ity, Sec. 47-10s-2e. T.D. 9,259 ft.; P.B.; sdtrkd.; drlg. sh. 9,263 ft.
Humble O. & R. Co.'s No. 29 Community, Sec. 30-10s-2e. Loc.
Kiva Oil Co.'s No. 1 Duplessis, Sec. 69-10s-2w. S.D. 2,523 ft.

Dog Lake—Terrebonne Parish

Texas Co.'s No. 11 State, Sec. 32-21s-16e. 10¾-in. csg. 1,751 ft.; drlg. wtr. sd. 6,996 ft.
Texas Co.'s No. 24 State, Sec. 5-22s-16e. Loc.

Edgerly—Calcasieu Parish

Emerson Oil Corp.'s No. 3 Stanolind fee Sec. 28-9s-11w. Sdtrkd.; T.D. 3,680 ft.; 5½-in. csg. 3,665 ft.; trying to sdtrk.

Eola—Avoyelles Parish

Amerada Pet. Corp.'s No. 4 Sam Ceraml, Sec. 6-2s-3e. Drlg. sh. 8,020 ft.
Amerada Pet. Corp.'s No. 3 Irion, Sec. 6-2s-3e. T.D. 8,615 ft.; abd.
Amerada Pet. Corp.'s No. 4 Irion, Sec. 7-2s-3e. Drlg. sh. 7,490 ft.
Amerada Pet. Corp.'s No. 1 Martin, Sec. 1-2s-2e. Drlg. sh. 3,212 ft.
Amerada Pet. Corp.'s No. 1 Turbe, Sec. 45-1s-2e. Drlg. sh. 1,450 ft.
Harry Bass et al's No. 2 Richie, Drlg. sh. 6,480 ft.
Gulf Oil Corp.'s No. 3 Mouliere, Sec. 1-2s-2e. T.D. 8,555 ft.; run 5½-in. csg.
Lester A. Lemoine's No. 1 fee, Sec. 41-1s-3e. Loc.
Geo. Lilly's No. 2 Dent, Sec. 1-2s-2e. Loc.
S. W. Richardson's No. 12 Haas Inv. Co., Sec. 8-2s-3e. T.D. 8,575 ft.; tstg.
S. W. Richardson's No. 1-B Haas Inv. Co., Sec. 42-1s-2e. Drlg. sh. 7,831 ft.

Erath—Vermilion Parish

Strake Pet. Co., Inc.'s No. 1 V. L. Caldwell, Sec. 41-13s-4e. Drlg. sh. 9,050 ft.
Texas Co.'s No. 1 Trahan, Sec. 22-13s-4e. R.U.

Fausse Point—Iberia Parish

Sun Oil Co.'s No. 2 Planters Lbr. Co., Sec. 27-11s-8e. 10¾-in. csg. 1,436 ft. drlg. sd.&sh. 5,309 ft.
Texas Co.'s No. 7 State, Sec. 35-11s-8e. T. salt 7,001 ft.; T.D. 7,005 ft.; P.B.; sdtrkd.; drlg. sdy. sh. 5,427 ft.
Sun Oil Co.'s No. 1 Walet & King, Sec. 26-11s-8e. Sd. 1,105-50 ft.; perf. csg. 1,100-45 ft.; I.P. 62 B.P.D.; 5/32-in. ck.

Garden Island—Plaquemines Parish

Texas Co.'s No. 44 State, Sec. 49-23s-33e. T.D. 5,297 ft.; 7-in. csg. 4,997 ft.; perf. csg. 4,795-4,870 ft.; I.P. 434 P.B.D.; ⅛-in. ck.
Texas Co.'s No. 45 State, Sec. 38-23s-33e. Drlg. sd.&sh. 856 ft.

Gibson—Terrebonne Parish

Shell Oil Co., Inc.'s No. 8 Pelican, Sec. 35-17s-15e. T.D. 11,440 ft.; P.B. 9,515 ft.; I.P. 901 B.P.D.; 16/64-in. ck.; perf. csg. 9,507-13 ft.

Gillis—Calcasieu Parish

Fohs Oil Co.'s No. 2-A M. P. Erwin, Sec. 14-9s-8w. T.D. 7,236 ft.; 5½-in. csg. 7,236 ft.; perf. csg. 7,179-91 ft.; I.P. 48 B.P.D.
Union Sulphur Co.'s No. 9 Kaufman, Sec. 7-9s-7w. T.D. 7,149 ft.; P.B.; sdtrkd.; drlg. 6,117 ft.
Union Sulphur Co.'s No. 3 McIver, Sec. 14-9s-8w. Loc.

Golden Meadow—La Fourche Parish

Bennett O. & R. Co.'s No. 2 Authement, Sec. 12-19s-22e. Drlg. sd.&sh. 3,790 ft.
Bennett O. & R. Co.'s No. 1 Guilbeau, Sec. 2-19s-22e. Drlg. sh.&sd. 5,080 ft.
Berkshire Oil Co.'s No. 1 Nicol, Sec. 9-19s-22e. 10¾-in. csg. 2,362 ft.; drlg. sdy. sh. 9,780 ft.
Brown & Woods' No. 1 Guilbeau, Sec. 2-19s-22e. T.D. 2,673 ft.; 5½-in. csg. 2,636 ft.
Temple Hargrove's No. 5 Gaspard, Sec. 9-19s-22e. Drlg. sh. 2,936 ft.
Jim McMurray Prod. Co.'s No. 1 Orgeron, Sec. 12-19s-22e. Drlg. sh. 1,420 ft.
M. H. Marr et al's No. 1 Alario Community, Sec. 2-19s-22e. T.D. 2,665 ft.; 5-in. csg. 2,640 ft.; I.P. 108 B.P.D.; 85% S.W.
M. H. Marr et al's No. 2 B. & D. unit, Sec. 17-19s-22e. Road comp.
M. H. Marr et al's No. 3 B.&D. unit, Sec. 12-19s-22e. 10¾-in. csg. 2,580 ft.
Martex Oil Corp.'s No. 5 Falgout Holding Co., Sec. 9-19s-22e. Drlg. sd.&sh. 2,890 ft.
Martex Oil Corp.'s No. 2-C Rebstock Community, Sec. 2-19s-22e. T.D. 2,670 ft.; 5½-in. csg. 2,641 ft.; I.P. 127 B.P. D.; 10/64-in. ck.
Geo. O'Dwyer's No. 3 La Fourche Realty Co., Sec. 21-19s-22e. R.U.
S. Rhodes' No. 1 Nickerson, Sec. 12-9s-8w. Drlg. sh. 5,520 ft.
C. R. Schuster's No. 1 Broussard, Sec. 2-19s-22e. T.D. 2,648 ft.; 5-in. csg. 2,637 ft.; tstg.
Terouche Oil Co.'s No. 2 Cheramie, Sec. 12-19s-22e. Drk.
Texas Co.'s No. 13 Falgout Holding Co., Sec. 9-19s-22e. Drlg. sd.&sh. 2,496 ft.
Texas Co.'s No. 12 Golden Meadow, Sec. 78-19s-21e. T.D. 9,250 ft.; sdtrkd.; T.D. 7,810 ft.; fsg.
Texas Co.'s No. 11 L.L.&E., Golden Meadow, Sec. 78-19s-21e. T.D. 5,162 ft.; 7-in. csg. 5,158 ft.; I.P. 276 B.F.P.D.; 2½% S.W.; ⅛-in. ck.
Texas Co.'s No. 6 La Terre, Sec. 1-20s-21e, 10¾-in. csg. 2,050 ft.; drlg. sh. &sd. 10,127 ft.
Texas Co.'s No. 7 La Terre, Sec. 1-20s-21e. T.D. 2,670 ft.; 7-in. csg. 2,638 ft.

Grand Bay—Plaquemines Parish

Gulf Ref. Co.'s No. 2-A Grand Prairie Lv. dist., Sec. 48-20s-18e. T.D. 9,72 ft.; 5½-in. csg. 9,718 ft.; perf. csg. 9,680-9,702 ft.; flwd. gas.
Gulf Oil Co.'s No. 7-A Grand Prairie Lv. Dist., Sec. 5-20s-19e. Loc.
Gulf Oil Co.'s No. 8-A Grand Prairie Dist., Sec. 5-20s-19e. Loc.
Gulf Oil Co.'s No. 9-A Grand Prairie Lv. dist., Sec. 31-19s-19e. Loc.
Gulf Oil Co.'s No. 5 State QQ, Sec. 31-19s-19e. Loc.
Gulf Ref. Co.'s No. 6 State, Sec. 5-20s-19e. T.D. 8,130 ft.; 5½-in. csg. 8,130 ft.; perf. csg. 8,109-29 ft.; I.P. 422 B. P.D.; ⅛-in. ck.
Texas Co.'s No. 3 State-Lookout Pass, Sec. 6-20s-19e. Drlg. sdy. sh. 8,527 ft.

Grand Lake—Cameron Parish

Amerada Pet. Corp.'s No. 10 State, Twp. 13s-4w. Drlg. sh. 8,604 ft.
Superior Oil Co.'s No. 10 State, Sec. 5-16s-4w. Drlg. sh. 5,030 ft.

Hackberry—Cameron Parish

Hanson & Abercrombie's No. 2 Verdin, Sec. 36-12s-10w. Cg. sd. 7,015 ft.
Stanolind O. & G. Co.'s No. 22 Cameron Parish, Sec. 16-12s-10w. Drlg. sh.&L. 6,418 ft.
Stanolind O. & G. Co.'s No. 31 Gulf Ld., Sec. 25-12s-11w. Drlg. sh. 7,436 ft.
Superior Oil Co.'s No. 10 Vincent, Sec. 30-12s-10w. T.D. 8,301 ft.; run 5½-in. csg.

Happytown—Iberville Parish

Shell Oil Co., Inc.'s No. 1 Schwing Lbr. & Shingle Co., Sec. 85-7s-8e. Cg. sh. 10,529 ft.

Horseshoe Bayou—St. Mary Parish

Texas Co.'s No. 4 State, Sec. 23-17s-9e T.D. 12,056 ft.; abd.

Jeanerette—St. Mary Parish

Cajun Oil Co.'s No. 1 Roanes Sugar Co., Sec. 58-13s-8e. Drk.
Herton Oil Co.'s No. 10 Banta, Sec. 40-13s-9e. 10¾-in. csg. 2,950 ft.

Jefferson Island—Iberia Parish

Texas Co.'s No. 5 Jefferson Island, Sec. 58-12s-5e. 10¾-in. csg. 2,209 ft.; drlg. sdy. sh. 6,072 ft.
Texas Co.'s No. 6, Jefferson Island, Sec. 59-12s-5e. Loc.
Texas Co.'s No. 3 State, Twp. 12s-5e-T.D. 7,749 ft.; P.B.; drlg. sh.&L. 7,231 ft.

Jennings—Acadia Parish

Port City Oil Co.'s No. 26 Haywood, Sec. 41-9s-2w. T.A. 3,005 ft.; 7-in. csg. 1,826 ft.
Shell Oil Co., Inc.'s No. 11 Community, Sec. 40. 10¾-in. csg. 1,721 ft.; drlg. sh. 7,602 ft.
Stanolind O. & G. Co.'s No. 20 Houssiere-Latreille, Sec. 47-9s-2w. Drlg. sd.&sh. 1,520 ft.

Lafitte—Jefferson Parish

Texas Co.'s No. 15 Lafitte, Sec. 20-17s-24e. T.D. 10,135 ft.; 7-in. csg. 10,123 ft.; 5-in. csg. 10,040 ft.; drlg. plug.
Texas Co.'s No. 16 L.L.&E., Lafitte, Sec. 17-17s-24e. Drlg. sh.&L. 8,884 ft.
Texas Co.'s No. 6 Marrero, Sec. 21-17s-24e. 10¾-in. csg. 1,861 ft.

La Fourche Crossing—La Fourche Parish

Lisbon-Iberia Oil Co.'s No. 1 Joe Bergeron, Sec. 16-15s-17e. Loc.
Lisbon-Iberia Oil Co.'s No. 1 Prosper Thibodaux, Sec. 17-15s-17e. Drlg. by fish; T.D. 8,750 ft.
Mikton Oil Co.'s No. 3 Martinez, Sec. 13-15s-17e. Loc.

Lake Mongoulois—St. Martin Parish

Texas Co.'s No. 8 State, Sec. 10-10s-9e. Drlg. sdy. L. 10,315 ft.

Lake Pelto—Terrebonne Parish

Texas Co.'s No. 31 State, Sec. 8-23s-18e. T.D. 5,761 ft.; P.B.; sdtrkd.; cg. sdy. sh. 5,601 ft.

Leeville—La Fourche Parish

Texas Co.'s No. 73 Leeville, Sec. 27-21s-22e. Drlg. sdy. sh.&L. 8,226 ft.

Neale—Beauregard Parish

Atlantic Ref. Co.'s No. 1 Musser-Davis Lbr. Co., Sec. 26-3s-11w. Drlg. sh. 2,020 ft.
Atlantic Ref. Co.'s No. 1 Spiers, Sec. 26-3s-11w. Drlg. sh. 7,260 ft.

New Iberia—Iberia Parish

Acadian Prod. Co.'s No. 4 E. T. Weeks. Sec. 51-12s-7e. Loc.
Wm. Helis' No. 10 Schwing, Sec. 56-12s-7e. T. salt 8,952 ft.; T.D. 8,960 ft.; 6-in. csg. 8,883 ft.; perf. csg. 8,744-53 ft.; rec. oil on D.S.T.
Wm. Helis' No. 1 Boliver, Sec. 56-12s-7e. T.D. 1,026 ft.; 7-in. csg. 998 ft.
Texas Co.'s No. 2 Bryant, Sec. 25-12s-7e. R.U.
Texas Co.'s No. 7 Bryant, Sec. 25-12s-7e R.U.
Texas Co.'s No. 16 Duke, Sec. 26-12s-7e. T.D. 927 ft.; run csg.
Texas Co.'s No. 17 Duke, Sec. 26-12s-7e. T.D. 6,066 ft.; 7-in. csg. 6,016 ft.
Texas Co.'s No. 2 Hebert, Sec. 25-12s-7e. 10¾-in. csg. 1,935 ft.; T.D. 8,535 ft.; 7-in. csg. 8,515 ft.; flwd. oil and S.W. perf. csg. 8,470-82 ft.; I.P. 49 B.O. and 65% S.W. per day; 10/64-in. ck.
Texas Co.'s No. 2 Smith, Sec. 71-12s-7e. T.D. 9,791 ft.; 7-in. csg. 9,791 ft.; perf. csg. 9,212-26 ft.; flwd. S.W.; abd.

North Crowley—Acadia Parish

Humble O. & R. Co.'s No. 7 Ohlenforst. Sec. 34-8s-1e. T.D. 8,800 ft.; 5½-in. csg. 8,786 ft.; I.P. 795 B.P.D.; ¼-in. ck.
Humble O. & R. Co.'s No. 5 Stakes, Sec. 33-8s-1e. Drlg. sh. 8,955 ft.
Humble O. & R. Co.'s No. 6 Stakes, Sec. 33-8s-1e. Drk.

North Elton—Calcasieu Parish

W. T. Burton's No. 1 Calcasieu Natl. Bnk., Sec. 23-6s-3w. Drlg. sh. 7,050 ft.
W. T. Burton's No. 1 Pine Farms, Sec. 24-6s-3w. Loc.

Paradis—St. Charles Parish

Humble O. & R. Co.'s No. 1 Matthews & Olivera, Sec. 4-14s-20e. Loc.
Texas Co.'s No. 4 L.L.&E. Paradis, Sec. 6-14s-20e. 10¾-in. csg. 2,607 ft.; drlg. sh. 10,483 ft.
Texas Co.'s No. 1 Sunset Realty & Planting Co., Sec. 38-14s-20e. 10¾-in. csg. 2,716 ft.; drlg. sh. 8,898 ft.

Plumb Bob—St. Martin Parish

Texas Co.'s No. 13 St. Martin Ld. Co. Sec. 21-8s-7e. T.D. 8,464 ft.; 7-in. csg. 8,464 ft.; perf. csg. 8,256-70 ft.; swbd.; no show.
Texas Co.'s No. 14 St. Martin, Sec. 21-8s-7e. Loc.

Port Barre—St. Landry Parish

Gulf Ref. Co.'s No. 16 Wilson Cochran, Sec. 4-6s-5e. Drlg. sh.&L. 4,370 ft.
McDannald Oil Co.'s No. 1 Sibille, Sec. 7-6s-6e. T.D. 6,074 ft.; P.B.; sdtrkd.; drlg. sh. 5,300 ft.
Sorrento Synd.'s No. 2 L. L. Barnard. 7-6s-6e. Loc.
Pan American Prod. Co.'s No. 6 Garland, Sec. 4-6s-5e. T.D. 6,086 ft.; 7-in. csg. 6,053 ft.; I.P. 670 B.P.D.; ¼-in. ck.
Texas Co.'s No. 28 Botney Bay, Sec. 4-6s-5e. Drlg. sd. 5,530 ft.

Potash—Plaquemines Parish

Humble O. & R. Co.'s No. 43 Orleans Lv. Bd., Sec. 14-18s-15e. T.D. 8,025 ft.; 7-in. csg. 8,065 ft.; I.P. 27 B.P.H.; ¼-in. ck.

Quarantine Bay—Plaquemines Parish

Gulf Oil Corp.'s No. 6-A Orleans Lv. Bd., Sec. 7-19s-17e. Drlg. sh. 9,160 ft.
Gulf Ref. Co.'s No. 17 State, Twp. 19s-17e. T.D. 8,576 ft.; run csg.
Gulf Ref. Co.'s No. 18 State, Twp. 19s-17e. Loc.

Sorrento—Ascension Parish

Pan American Prod. Co.'s No. 18 United Ld. Co., Sec. 15-10s-4e. R.U.
Pan American Prod. Co.'s No. 19 United Ld. Co., Sec. 15-10s-4e. Loc.
Sorrento Synd.'s No. 2 L. L. Bernard, Sec. 22-10s-4e. R.U.

South Jennings—Jeff Davis Parish

W. H. Collins' No. 1 Richard, Sec. 22-10s-3w. Drk.
Stanolind O. & G. Co.'s No. 1 W. H Adams, Sec. 14-10s-3w. Drlg. sh. 9,587 ft.
Stanolind O. & G. Co.'s No. 1 E. K. Atwell, Sec. 14-10s-3w. Drlg. sdy. sh. 2,420 ft.
Stanolind O. & G. Co.'s No. 1 L. Renage, Sec. 9-10s-3w. T.D. 10,953 ft.; fsg.
Stanolind O. & G. Co.'s No. 1 Hebert, Sec. 21-10s-3w. R.U.

South Roanoke—Jeff Davis Parish

Continental Oil Co.'s No. 2 Fay, Sec. 31-10s-3w. Drlg. sh. 8,988 ft.
Continental Oil Co.'s No. 4 Sturdevant, Sec. 35-10s-4w. T.D. 9,978 ft.; 7-in. csg. 9,870 ft.; I.P. 91 bbl. dist., 9 hrs.; ⅛-in. ck.

Starks—Calcasieu Parish

W. T. Burton & McLean's No. 2 Industrial Lbr. Co., Sec. 29-9s-12w. T.D. 5,849 ft.; T. sd. 5,833 ft.; tstg.
W. T. Burton Oil Co.'s No. 1 Lutcher Moore Lbr. Co., Sec. 30-9s-12w. T.D. 4,810 ft.; 5½-in. csg. 3,990 ft.; U.R.

Sweet Lake—Cameron Parish

Pure Oil Co.'s No. 17 Stanolind O. & G. Co., Sec. 12-13s-8w. 9⅝-in. csg. 1,431 ft.; T.D. 4,594 ft.

Timbalier Bay-La Fourche

Gulf Ref. Co.'s No. 8 State, Sec. 36-23s-21e. Loc.

Valentine—La Fourche Parish

T. G. Markley et al's No. 2 Dousson, Sec. 100-17s-20e. Drlg. sdy. sh. 3,914 ft.

Venice—Plaquemines Parish

Tide Water Asso. Oil Co.'s No. 1 C. L. Johnson, Sec. 35-21s-30e. T.D. 8,303 ft.; dropped csg. in hole; fsg.
Tide Water Asso. Oil Co.'s No. 12 Manhattan Ld. Co., Sec. 35-21s-30e. Loc.

Vermilion Bay—Iberia Parish

Texas Co.'s No. 4-B Vermilion Bay, Twp. 16s-15e. 11¾-in. csg. 4,454 ft.; T. salt 5,855 ft.; T.D. 7,546 ft.; rng. csg.

Ville Platte—Evangeline Parish

Amerada Pet. Corp.'s No. 1 J. Foret, Sec. 1-4s-2e. Drlg. sh.&sd. 8,990 ft.
Continental Oil Co.'s No. 3 Fontenot, Sec. 47-3s-2e. Drlg. sd.&sh. 8,585 ft.
Continental Oil Co.'s No. 5 Hass, Sec. 44-3s-2e. Drlg. 4,726 ft.
Continental Oil Co.'s No. 5 Hirsch, Sec. 44-3s-2e. Drlg. sh. 9,590 ft.
Continental Oil Co.'s No. 4 Tate, Sec. 1-4s-2e. Drlg. sh. 8,656 ft.
Continental Oil Co.'s No. 1 J. E. Vidrine, Sec. 47-3s-2e. Drlg. sh. 3,245 ft.
Continental Oil Co.'s No. 2 Vidrine, Sec. 1-4s-2e. Drlg.
Continental Oil Co.'s No. 1 J. E. Vidrine, Sec. 47-3s-2e. Drlg. sh. 8 780 ft.
Danciger O. & R. Co.'s No. 3 Vidrine, Sec. 1-4s-2e. R.U.
J. K. Hughes' No. 2 Ortego, Sec. 36-3s-2e. T.D. 10,230 ft.; 6-in. csg. 10,230 ft.; perf. csg. 10,136-56 ft.

West Cote Blanche—St. Mary Parish

Texas Co.'s No. 2 State, West Cote Blanche, Twp. 16s-6e. Drlg. sh.&L. 6,001 ft.
Texas Co's No. 3 State, West Cote Blanche, Twp. 16s-6e. Loc.

West Gueydan—Vermilion Parish

Magnolia Pet. Co.'s No. 1 Benoit, Sec. 5-12s-2w. 10¾-in. csg. 1,900 ft.

White Castle—Iberville Parish

Jolly Pet. Corp.'s No. 1 E. B. Adams, Sec. 1-11s-12e. T.D. 9,002 ft.; 7-in. csg. 9,001 ft.; P.B. 8,898 ft.; perf. csg. 8,-910-14 ft.; flwd. oil and S.W.
Shell Oil Co., Inc.'s No. 16 Wilbert, Sec. 8-11s-12e. T.D. 6,465 ft.; P.B. 6,385 ft. make D.S.T.

Woodlawn—Jeff Davis Parish

Union Sulphur Co.'s No. 3 Johnson, Sec. 12-9s-6w. Drlg.
Union Sulphur Co's No. 1 T. Miller, Sec. 6-9s-5w. Drlg. sh. 6,675 ft.

S. LOUISIANA WILDCATS

Acadia Parish

Humble O. & R. Co.'s No. 1 F. E. Atkinson, Sec. 26-10s-1e. Drlg. sh. 7,802 ft.

Assumption Parish

Shell Oil Co., Inc.'s No. 1 A. L. Patereau, Unit 1, Sec. 66-16s-14e. Drlg. sh. 6,-998 ft.

Beauregard Parish

Danciger O. & R. Co.'s No. 1 G. E. Le-Roy, Sec. 2-3s-9e. R.U.
Loffland Bros.' No. 3 Long Bell Lbr. Co., Sec. 24-5s-11w. T.D. 10,224 ft.

Calcasieu Parish

M. H. Hannah's No. 1 Reed, Sec. 18-10s-12w. Loc.

Cameron Parish

Phillips Pet. Co.'s No. 1 Miami Corp. Sec. 11-4s-6w. Well tried to blow out; stk. D.S.; sdtrkd. 3,775 ft.; 9⅝-in. csg. 9,583 ft.; T.D. 10,511 ft.; rmg.
Superior Oil Co.'s No. 2 State, Twp. 14s-9w. T. salt 3,614 ft.; T.D. 7,588 ft.; abd.
Superior Oil Co.'s No. 3 State, Sec. 1-14s-9w. R.U.

East Baton Rouge Parish

Farris & Golding Drlg. Co.'s No. 1 Paulet, Sec. 58-8s-1e. 10¾-in. csg. 1,780 ft S.D. 6,828 ft.

Iberia Parish

H. J. De Arman's No. 1 Burleigh, Sec. 21-13s-7e. S.D. 3,031 ft.

Iberville Parish

Falcon-Seaboard's No. 1 Folse, Sec. 11s-13e. Drlg.
Shell Oil Co., Inc.'s No. 1 Southwood, Sec. 20-9s-2e. Cg. sh. 10,160 ft.

Jeff Davis Parish

H. M. Naylor's No. 1 Acadia Dev. Co., Sec. 12-10s-2w. 10¾-in. csg. 2,115 ft.; 9⅝-in. csg. 9,006 ft.; T.D. 10,000 ft.; 7-in. csg. 10,000 ft.; perf. csg. 9,703-20 ft.; flwd. gas and S.W.; killed to retest.
Union Sulphur Co.'s No. 1 Eba Miller, Sec. 6-9s-5w. Loc.

Jefferson Parish

Shell Oil Co., Inc.'s No. 1 State, Sec. 27-20s-24e. Loc.
Vendome Pet. Co.'s No. 1 Coulon, Sec. 15-15s-23e. Drlg. sh. 9,622 ft.

La Fourche Parish

Ernest Cockrell's No. 1 La Fourche Ld. Co., Sec. 32-18s-22e. 10¾-in. csg. 650 ft.; T.D. 2,988 ft.; prep. to rea. drlg.
Gulf Oil Corp.'s No. 1-B Bowie Lbr. Co., Sec. 69-15s-19e. Drlg. sh. 12,327 ft.
Humble O. & R. Co.'s No. 1 Caldwell Sugars, Inc., Sec. 115-14s-15e. 13⅜-in. csg. 2,988 ft.; 9⅝-in. csg. 10,921 ft.; drlg. sh. 11,908 ft.

Plaquemines Parish

Gulf Oil Corp.'s No. 1-E Buras Lv. dist., Sec. 1-23s-10e. T.D. 9,287 ft.; 9⅝-in. csg. 9,269 ft.
California Co.'s No. 1 Delta Minerals, Sec. 2-15s-24e. 13⅜-in. csg. 2,028 ft.; T.D. 10,246 ft.; 7-in. csg. 10,188 ft.; perf. csg. 9,963-72 ft.; flwd. 80% oil, 20% S.W.

Rapides Parish

Gulf States' No. 1 Long Bell Lbr. Co., Sec. 46-4n-3w. R.U.
R. L. Wheelock et al's No. 1 H. V. Rushing, Sec. 1-2n-1e. Drlg. sh. 4,753 ft.

St. Charles Parish

Celestine Oil Co.'s No. 1 Celestine plantation, Sec. 17-11s-4e. Drlg. sh. 750 ft.
R. H. Parker et al's No. 1 C. L. Thompson, Sec. 87-13s-20e. 10¾-in. csg. 2,599 ft.; drlg. sh. 11,020 ft.
Texas Co.'s No. 1 State-Lake Salvador, Twp. 16s-22e. Loc.

St. James Parish

St. James Oil Co.'s No. 1 Celstine Plant, Sec. 74-11s-4e. R.U.

St. Landry Parish

S. A. Thompson's No. 1 Wm. Murphy, Sec. 22-5s-6e. 10¾-in. csg. 1,209 ft.; drlg. sh. 7,330 ft.

St. Mary Parish

Herton Oil Co.'s No. 1 H. Gonsoulin, Sec. 68-13s-8e. T.D. 3,030 ft.; abd.
Morgan City Oil Co.'s No. 1 Adeline Sugar Co., Sec. 33-13s-9e. T.D. 3,012 ft.; abd.
Sun Oil Co.'s No. 1 Belle Isle, Sec. 6-18s-11e. Drlg. sh. 3,237 ft.

Terrebonne Parish

Barnsdall Oil Co.'s No. 1 Nelson, Sec. 2-21s-11e. 10¾-in. csg. 2,767 ft.; 8⅝-in. csg. 10,505 ft.; T.D. 11,731 ft.; D.S.S.; P.B. 8,500 ft.; prep. to test 7,418-30 ft.
Stanolind O. & G. Co.'s No. 1 State (Bay Junop), Sec. 35-21s-14e. R.U.
Texas Co.'s No. 5 State, Coon Point, Twp. 23s-14e. Loc.

Vermilion Parish

Union Oil Co. of Calif.'s No. 1 Walter White hrs., Sec. 17-15s-1e. 13⅜-in. csg. 2,800 ft.; T.D. 10,395 ft.

South China—Jefferson County

Titanic Oil Co.'s No. 3-A Broussard, S. Miles Sur. Loc.

Esperson—Liberty County

General Crude Oil Co.'s No. 20 Davis, A. McNeil Sur. 8⅝-in. csg. 7,181 ft.; drlg. sh.&sd. 9,167 ft.
General Crude Oil Co.'s No. 12-B Esperson, A. McNeil Sur. Loc.
General Crude Oil Co. and R. A. Welch's No. 1 fee, M. Duncan Sur. T.D. 7,505 ft.; rmg.

Martha—Liberty County

Stanolind O. & G. Co.'s No. 1 Garrow, I.&G.N.R.R. Sur. 7. T.D. 9,825 ft.; 5½-in. csg. 9,208 ft.; tstd. S.W. 9,142-50 ft.; reperf. csg 8,512-20 ft.; made sqz. job; W.O.C.

Wilson Creek—Matagorda County

Barnsdall Oil Co.'s No. 1 Stoddard, G. B. M. Cotton Sur. 9⅝-in. csg. 7,895 ft.; drlg. sh. 10,200 ft.

Ace—Polk County

Shell Oil Co., Inc.'s No. 2 Kirby West Lbr. Co., P. A. Sublett Sur. Drlg. 7,-370 ft.

Segno—Polk County

Gordon Oil Co.'s No. 10-A Wing, I.&G. N. Sur. 15. Drlg. sh.&L. 5,910 ft.
Gulf Oil Corp.'s No. 4 Quinn, A. Morales Sur. R.U.
Gulf Oil Corp.'s No. 33 Wing, I.&G.N. Sur. 15. T.D. 8,176 ft.; 5½-in. csg. 8,-146 ft.
Gulf Oil Corp.'s No. 34 Wing, I.&G.N. Sur. 13. T.D. 8,067 ft.; I.P. 582 B.P. D.; ¼-in. ck.
Humble O. & R. Co.'s No. 23-BX Kirby Lbr. Co., M. Victor Sur. 9⅝-in. csg. 2,940 ft.

Joe's Lake—Tyler County

Republic Prod. Co.'s No. 4 Sterne, A. Sterne Sur. S.D. 5,000 ft.; abd.
Republic Prod. Co.'s No. 36 fee, N. Hurd Sur. Drlg. sh. 6,516 ft.
Dick Schwab et al's No. 1 Nona Fletcher Lbr. Co., E. Thompson Sur. R.U.

Hilje—Wharton County

Texas Co.'s No. 2 Peters, E.T.R.R. Sur., Sec. 101. Loc.

GULF COAST WILDCATS

Brazoria County

Glenn McCarthy's No. 2 Houston Farm Dev. Co., J. Perry & E. Austin Sur. 7. 10¾-in. csg. 3,492 ft.; T.D. 11,760 ft.; 5½-in. lnr. cs. 11,170 ft.; perf. csg. 10,128-31 ft. and 10,124-28 ft.; flwd. S.W.; abd.
Glenn McCarthy's No. 1 W. B. Munson, Samuel Carter Sur. T.D. 10,640 ft.; run elec. surv.
Rowan & Nichols Oil Co.'s No. 1 Hubbard, Wm. Harris Sur. Drlg. sdy. sh. 8,867 ft.

Chambers County

Humble O. & R. Co.'s No. 1 State, Sec. 247, Galveston Bay. Cg. 6,940 ft.
Humble O. & R. Co.'s No. 1 State, Sec. 288, Galveston Bay. Loc.
Sun Oil Co.'s No. 1 Clara C. Smith, T.& N.O. Sur. 82. T.D. 8,549 ft.; sdtrkd.; T.D. 8,320 ft.; D.S.S.; P.B.; sdtrkd.; drlg. sh.&L. 7,573 ft.
Standard Oil Co. of Texas' No. 61-54 State. T.D. 9,538 ft.; 7-in. csg. 9,129 ft.; perf. csg. 8,563-66 ft.; rec. S.W.; S.D.

Colorado County

Cockburn Oil Corp.'s No. 1 R. W. Ferrs, H. Chrisman Sur. Loc.
Shell Oil Co., Inc.'s No. 1 R. H. Goodrich, H. Heller Sur. R.U.
Shell Oil Co., Inc.'s No. 1 Plow Realty Co., Obediah K. Winn Sur. T.D. 8,339 ft.; 7-in. csg. 8,337 ft.; rec. 1,000 ft. oil and S.W.; D.S.T.

Fort Bend County

H. C. Cockburn's No. 1 G. W. Burkett, Bundieck Sur. Loc.
W. L. Goldston's No. 1 Kulcak, Carl Radke Sur., Sec. 48. T.D. 5,398 ft.; abd.
Superior Oil Corp.'s No. 2 A. P. George, A. B. Keller Sur. R.U.

Galveston County

Stanolind O. & G. Co.'s No. 1 J. A. Hulen, A. Brigham Sur. 13⅜-in. csg. 2,-470 ft.; T.D. 9,166 ft.; well blew out; flwg. est. 500 B.F.P.H., mostly oil.

Grimes County

Jordan Drlg. Co. et al's No. 1 Dodd, C. Campbell Sur. T.D. 3,770 ft.; abd.

Harris County

Christian-Carpenter Drlg. Co.'s No. 1 Anderson, J. C. Anderson Sur. 10¾-in. csg. 810 ft.
Gulf Oil Corp.'s No. 1 H. H. Roberts, A. Roberts Sur. T.D. 7,583 ft., S.D.
Hamill & Smith et al's No. 1 C. B. Carter, D. Putnam Sur. T.D. 6,524 ft.; abd.
Wm. Hobson's No. 1 N. N. Allen, Blk. 12, Geo. Green Sur. R.U.
Joyce Richardson's No. 1 Marks, J. C. Ogburn Sur. Cd. sd.&sh., oil odor, 6,-394-60 ft.; make D.S.T.

Jackson County

Barnsdall Oil Co.'s No. 1 Lozarus, S. F. Austin Sur. Rec. 1,980 ft. P.L.O.; D.S. T. 5,921-27 ft.; cg. abd.
J. F. Hutchins et al's No. 1 Wearden, J. Williams Sur. T.D. 6,147 ft.; abd.
Wellington Oil Co. et al's No. 1 Ward est, I.&G.N.R.R. Sur. T.D. 8,938 ft.; perf. csg. 5,933-37 ft.; flwd. 41 B.P.H.; ¼-in. ck.; tstg.

Jasper County

Houston Oil Co. et al's No. 1 Medrano fee, Jose Medrano Sur. 10¾-in. csg. 1,896 ft.

Jefferson County

Merrimac Oil Corp.'s No. 1 State, Tr. 72, 50 ft. due E of Harwell's abd. hole. W.O.; R.U.

Liberty County

Hebert & Smith's No. 1 W. E. Boyt, H. &T.C.R.R. Sur. 7-in. csg. 8,700 ft.; T.D. 8,865 ft.; sdtrkd.; drlg. sh.&sd. 8,995 ft.

Matagorda County

Deep Rock Oil Corp.'s No. 1 Tom Petrucha, F. W. Dempsey Sur. T.D. 10,-740 ft.; abd.
Marr McLean's No. 3 Gulf-Tex Oil Co., Ira Ingram Lge. R.U.
Stanolind O. & G. Co.'s No. 1 General American Life Ins., J. C. Peyton Sur. 9⅝-in. csg. 8,001 ft.; drlg. sdy. sh. 10,-443 ft.
Texas Gulf Prod. Co.'s No. 1 Gulf Tex. Oil Co., Ira Ingram Sur. Drk.
Texas Co.'s No. 1 A. B. Pierce, H.&G. N. Sur., Sec. 1, Blk. 65. Drlg. sh. 5,-420 ft.
Texas Co.'s No. 2 R. V. Taylor, F. George Sur. R.U.
Van M. Vincent's No. 1 J. F. McNabb Est., E. R. Wightman Lge. Loc.

Montgomery County

H. C. Cockburn et al's No. 1 Bender, Montgomery Co. Sch. Ld. and De Crow Sur. Loc.
Continental Oil Co.'s No. 1 Bender est., Montgomery Co. Sch. Ld. Sur. 13⅜-in. csg. 1,243 ft.; T.D. 11,193 ft.; fsg.
David B. MacDaniel's No. 1 Hattie O. Baldwin, Walker Co. Sch. Ld. Sur. 10¾-in. csg. 1,230 ft.; T.D. 9,741 ft.; 5½-in. csg. on bttm.; perf. csg. est. 9,300-9,400 ft.; reperf. csg. 9,392-9,425 ft.; swbg.

San Jacinto County

Harrison & Abercrombie's No. 1 W. S. Dixon, Solomon Cole Sur. Drlg. sh. &L. 7,820 ft.
Shell Oil Co., Inc.'s No. 1 Coldine, J. Rankin Sur. T.D. 7,985 ft.; rec. 9 B.O. and 9 bbl. S.W.; D.S.T. 7,815-7,790 ft.

Tyler County

J. C. Bonham's No. 1 Southwestern Lbr. Co., F. Smyth Sur. T.D. 1,340 ft.; P.B. 1,126 ft.; 4-in. csg. 1,107 ft.; flwd. P. L.O. for 3 hrs.; sanded up.

Walker County

E. J. Dupree's No. 1 Texas Long Leaf Lbr. Co., M. Milsap Sur. T.D. 3,113 ft.

Washington County

J. A. Deering's No. 1 C. W. Bohne, S. Gates Sur. S.D. 6,545 ft.
Mount Selman Oil Co.'s No. 1 Fritz Fuelberg, W. Lightfoot Sur. S.D. 5,-962 ft.
Standard Oil Co. of Kansas' No. 1 Kamas, S. M. Williams Sur. 10¾-in. csg. 583 ft.

Wharton County

Sam Harrison's No. 1 Carlson, Morris & Cummins Sur., Sec. 3. O.W.D.D.; T.D. 6,510 ft.; perf. csg. 5,806-09 ft.; flwg. oil and S.W.
Magnolia Pet. Co.'s No. 2 A. P. Borden, E. M. Cov Sur. Loc.
Dr. T. M. Neal's No. 1 fee, Elisha Flack, 4,840 ft.
Titanic Oil Co.'s No. 1 Kountze, Morris & Cummings Sur., Sec. 3. R.U.

S. W. TEXAS WILDCATS

Aransas County

Continental Oil Co.'s No. 2 St. Charles Co., R. D. Blassman Sur.; (relief well to blow out). Drlg. sh. 7,689 ft.

Atascosa County

H. M. Hill et al's No. 1 Campbell, Chas. Mason Sur. 128. Drk.
Walter Pope's No. 1 Countiss, A.B&M. Sur. 1013. S.D. 715 ft.

Bastrop County

Ashby & Williams' No. 1 C. Y. Powell, J. G. Welchmeyer Sur. Drlg. sdy. sh. 400 ft.
August Bering's No. 1 Rivers, B. Osborne Sur. Drlg. 1,412 ft.
C. R. Franklin's No. 1 Oscar McDonald, Martha Baker Sur. T.D. 2,232 ft.; fsg.
W. C. McGlothlin et al's No. 1 Bill, Albert Black Sur. Cg. ck. 3,020 ft.
Ogden & Riddle's No. 6 Riddle, J. B. Blalock Sur. T.D. 2,244 ft., clk.; 5½-in. csg. 2,005 ft.; swbg.; N.S.

Bee County

Mills Bennett Prod. Co. and Anderson-Prichard Oil Corp.'s No. 2 Robinson, J. M. Uranga Sur. (Wlx. test, West Tuleta field). 13-in. csg. 2,537 ft.; 9⅝ in. csg. 7,804 ft.; T.D. 9,210 ft.; perf. csg. 7,545-50 ft.; tstd. 6½ bbl. dist. per hr., ¼-in. ck. on tbg.; T.P. 2,600 lb.; C.P. 2,250 lb.; S.I.; W.O.
Sultex Oil Co.'s No. 1 Wood, Jas. McGeehan Sur. T.D. 6,162 ft.; 7-in. csg. on bttm.; drlg. plug.

Bell County

J. J. Cormas' No. 1 Jeff Ellis, Elisabeth Berry Sur. S.D. 498 ft.

Bexar County

C. G. Bigby's No. 1 Mauermann, Fernando Rodriguez Sur. T.D. 649 ft.

TEXAS

Week Ended May 25

GULF COAST FIELDS

Anchor—Brazoria County

Humble O. & R. Co.'s No. 2 Mettler. Drlg. sh. 9,876 ft.
Sun Oil Co.'s No. 1 Morris Stern, Shubal Marsh Sur. 18⅝-in. csg. 128 ft.; T.D. 10,542 ft.; rmg.

Old Ocean—Brazoria County

Harrison & Abercrombie's No. 8 Bernard, C. Breen Sur. Drlg. sh.&L. 5,-936 ft.
Harrison & Abercrombie's No. 1 Chenault, C. Breen Sur. Drlg. sh.&L. 10,-216 ft.
Harrison & Abercrombie's No. 1 Mueller et al, M. M. Nuckols Sur. Drlg. sh.& L. 7,524 ft.
Harrison & Abercrombie's No. 1 A. F. Wilson, D. McCormick Sur. Drlg. sh.& L. 10,312 ft.
Stanolind O. & G. Co.'s No. 2 Giles, C. Breen Sur. Cg. sd.&sh. 10,100 ft.
Stanolind O. & G. Co.'s No. 1 Stevenson-Donovan, Inia Keep Sur. 9⅝-in. csg. 7,039 ft.; drlg. sdy. sh. 9,923 ft.
Sun Oil Co.'s No. 4 Borsodi, C. Breen Sur. 13⅜-in. csg. 1,520 ft.; 9⅝-in. csg. 7,009 ft.; drlg. sh.&sd. 10,615 ft.
Sun Oil Co.'s No. 5 McCampbell, C. Breen Sur. Drlg. sd.&sh. 9,846 ft.

South Cotton Lake—Chambers County

Humble O. & R. Co.'s No. 1 E. E. Barrow, S. Barrow Sur. Drlg. sh. 4,010 ft.

Willow Slough—Chambers County

Sun Oil Co.'s No. 3 R. J. Barrow, A. Ybarbo Sur. Drlg. sh. 2,383 ft.

Caplen—Galveston County

Sun Oil Co.'s No. 5 Zinn & Forman, S. F. Hughes Sur. Drlg. sh.&L. 5,362 ft.

League City—Galveston County

Phillips Pet. Co.'s No. 1 Parr, Perry & Austin Sur., Lot 9. Drlg. sh. 8,727 ft.
Phillips Pet. Co.'s No. 4 Stewart Title Guaranty Co., S. F. Austin Sur. 10¾-in. csg. 3,520 ft.; 7⅝-in. csg 9,510 ft.; T.D. 11,270 ft.; well blew out; killed; P.B.; sdtrkd.; drlg. sh.&sd. 10,424 ft.

Aldine—Harris County

Titanic Oil Co.'s No. 1 Weary, Lots 21 and 20, E. Farias Sur. Loc.

Clear Lake—Harris County

Humble O. & R. Co.'s No. 44-C fee, G. B. McKinstry Sur. Loc.
Humble O. & R. Co.'s No. 8 Hutchinson, Wm. Dobie Sur. Drlg. sh. 4,420 ft.

Friendswood—Harris County

Humble O. & R. Co.'s No. 34 Beamer T. Choate Sur. Drlg. sh. 1,700 ft.

Fannett—Jefferson County

Gulf Oil Corp.'s No. 5 Bordages, J. Probarth Sur. Drlg. sh. 4,316 ft.

La Belle—Jefferson County

Sun Oil Co.'s No. 1 Foltz, Sur. 376. 9⅝-in. csg. 7,600 ft.

Joe Noake's No. 1 San Antonio Sub. Irrg. Farm, W. Miller Sur. 180. T.D 780 ft.
Roger Putnam's No. 1 Conaway, John H. Lucas Sur. 54. R.U.
Jos. Turner et al's No. 1 John Brown, T. H. Hobbs Sur. 357. R.U.

Burleson County

H. Y. Barnett's No. 1 Fick. J. S. Cox Sur. Drld. bkn. sd. S.O. 1,375-80 ft.

Caldwell County

J. E. Dickson's No. 1 Jeff Connolly, J. D. Rains Sur. T.D. 2,862 ft.; abd.
Kean & Williamson's No. 1 E. E. Rector, J. Roberts Sur. T.D. 1,781 ft.; S.D.

Calhoun County

Coronado Corp.'s No. 1 K. Welder, Hidalgo Sur., 3 mi. SE Seadrift. "Tight well"; reported to be tstg.; 5½-in. csg. 9,750 ft.; perf. csg. 9,500-9,600-9,700 ft.; rec. S.W.; made sqze. job at 8,580 ft.; S.D.
Eura B. Oil Co.'s No. 1 T. P. Traylor, Sec. 3, I.&G.N. Sur. Drlg. sh. 3,730 ft.

Cameron County

Sal Vieja Oil Co. et al's No. 1 Garcia, Santa Isabel gr. 8⅝-in. csg. 8,322 ft.; drlg. sh. 9,768 ft.

Duval County

Bridwell Oil Co.'s No. 1-A Rogers, J. Poitevent Sur., Sec. 21. Rec. 210 ft. oil; 10-min. D.S.T. 4,321-27 ft.; T.D. 4,327 ft.; run csg.
W. L. Catin et al's No. 1 Louis Escapule, J. Poitevent Sur. 73. R.U.
Mayfair Oil Corp.'s No. 2 Yates, J. Poitevent Sur. 323. Spd.
Sun Oil Co.'s No. 1 Garcia, A.B.&M. Sur., Sec. 407. T.D. 5,087 ft.; 5½-in. csg. 4,959 ft.; made sqze. job; pmpg.; no ga.

Gillespie County

E. L. Nixon's No. 1 Mayford, Pedro Cobrera Sur. 29. Drlg. sh. 675 ft.

Gonzales County

M. T. Huebner's No. 1 M. P. Smith, R. Plummer Sur. T.D. 1,135 ft.

Guadalupe County

Wellington Oil Co.'s No. 1 Mouermann. Jose de la Bauma Sur. Drlg. sh. 2,827 ft.

Hidalgo County

Gulf State Oil Co.'s No. 2 Cardinas, San Salvador del Tule gr. 16-in. csg. 157 ft. T.D. 8,700 ft.; perf. csg. 7,734-52 ft.; flwg. dry gas.

Jim Hogg County

Achning-Daubert's No. 1 Wood, Sabas de la Garza Sur. 82. Loc.
French Oil Corp.'s No. 3 Pena, G. W. Rose Sur. 574. Loc.
Humble O. & R. Co.'s No. 3 Mestena O. & G. Co., San Antonio de Baluarte gr., Sec. 392. Cg. sdy. sh. 5,224 ft.

Jim Wells County

J. W. Calvert's No. 1 Spoetzle, Wm. Hobbs Sur. T.D. 4,814 ft.; flwd. P.L. O.; D.S.T. 4,811-14 ft.; flwg. 105 B.F. P.D.; 5/32-in. ck.; 60 to 40% S.W.
Henshaw Bros.' No. 1 Blasehke, Casa Blanca gr. T.D. 5,603 ft. ;5½-in. csg. 5,175 ft.; perf. csg. 5,100-03 ft.; I.P. 87 B.P.D. plus 32% S.W.; ⅛-in. ck.
H. H. Howell's No. 1 San Antonio Joint Stock Ld. Bnk., Lopez gr., Sec. 9, Blk. 14. Drlg. sh. 2,706 ft.
H. H. Howell and W. C. McBride, Inc.'s No. 1 E. Schreade, Casa Blanca gr., 2 mi. NE of Orange Grove. T.D. 5,094 ft.; 5½-in. csg. on bttm.; perf. csg. 5,087-96 ft.; I.P. 140 B.P.D.; 7/64-in. ck.
H. H. Howell and Tesemelis' No. 1 D. C Daniels, M. Berrera gr. Loc.
Mid-Continent Pet. Corp.'s No. 1 Schonvogel, Casa Blanca gr. T.D. 5,433 ft.; abd.
M. M. Miller & Son's No. 1 T. M. Gallagher, Casa Blanca gr. Drlg. sh. 2,767 ft.

Kendall County

C. M. Dewey's No. 2 Seidensticker, R Davis Sur. 20. S.D. 950 ft.

Kimble County

Austin Bridge Co.'s No. 1 Wilkinson, Brooks & Burleson Sur. Drlg. 834 ft.
J. C. Renfro's No 1. D. C. Morales, Hrs. of H. Grote Sur. 423. T.D. 1,495 ft.; U.R.
Schwab-Carlyle & Auld's No. 1 Baker. F. C. Stisser Sur. T.D. 1,490 ft.; fsg.

Kleberg County

Skelly Oil Co.'s No. 1 State, Laguna de Los Olmos gr., Tr. 385. Rec. 294 ft. oil, 9½-min. D.S.T. 7,455-60 ft.; T.D. 8,531 ft.; 7⅝-in. csg. 7,669 ft.

La Salle County

Robt. Cooper's No. 1 Yaeger, A.B.&M. Sur. 53. T.D. 1,031 ft.; abd.
H. R. Cullen's No. 1 A. L. Washburn, L. W. Earnest Sur. 88. T.D. 5,160 ft.; rmg.

Lee County

Fred Pederson et al's No. 1 Brown, David Hudson Sur. T. Glen Rose L. 6,600 ft. T.D. 8,202 ft.; 5½-in. lnr. cmtd. 8,201 ft.

Live Oak County

Messer & Cage's No. 1 Kluver, S. E. Gilmore Sur. 406. 10-in. csg. 35 ft.; T.D. 3,038 ft.; abd.
Sinclair Prairie Oil Co.'s No. 1 Hamilton, Hooper & Wade Sur. 119. 10¾-in. csg. 510 ft.; T.D. 4,042 ft.; rmg.
Smith & Storey's No. 1 Lyne. A.C.H.& B. Sur. 163. Drlg. sh. 3,212 ft.
L. W. Stieren's No. 3 Lange, Thos. Adams Sur. T.D. 1,497 ft.

McMullen County

W. F. Ashby's No. 1 Enlaw, D. M. Stapp Sur. 27. Drlg. 1,030 ft.
McCormick-King Prod. Co.'s No. 1 Shiner, Jose Alderete Sur. 14. Loc.
Tybro Royalty Co.'s No. 4 Martin, H. L. Williams Sur. T.D. 715 ft.

Medina County

W. D. Bacon's No. 1 Wurzbach, Juan Delgado Sur. 37⅓. T.D. 450 ft.
G. R. and L. J. Dorsey's No. 1 Robertson, John George Sur. S.D. 425 ft.
Great Southern Exp. Co.'s No. 1 A. Muennick Sur. 5. S.D. 744 ft.

Nueces County

Humble O. & R. Co.'s No. 1-D State, Laguna Madre Bay, Flour Bluff field. T.D. 6,955 ft.; 7-in. csg. on bttm.; perf. csg. 6,790-6,800 ft.; I.P. 177 B.P.D.; ⅛-in. ck.
John Manley et al's No. 1 Ruegg, Geo. H. Pauls subd. of Driscoll ranch. Loc.
Pure Oil Co.'s No. 1 S. Little, S. Ward Sur. 194. 13⅜-in. csg. 179 ft.; drlg. sh. 5,056 ft.
Southern Minerals Corp.'s No. 1 Community. Paso Ancho de Abajo gr. Drlg. sh. 5,510 ft.
Southern Minerals Corp.'s No. 1 D. C. Heilmann, E. R. Oliver, Jr., Sur., Sec. 148. 10¾-in. csg. 746 ft.; T.D. 6,510 ft.; abd.
Stanolind O. & G. Co.'s No. 1 State, C. M. Blucher Sur., Tr. 746, 1½ mi. S of E. White Point field. Loc.

Refugio County

C. L. Norsworthy's No. 1 T. C. Holeman, M. Reilly Sur. Drlg. sh. 6,491 ft.

San Patricio County

L. L. Smith's No. 1 Timon, Town Tr. of San Patricio de Hibernia. T.D. 6,049 ft.; abd.

Starr County

Geo. Boyle et al's No. 1 Carruth, Santiago Lopez Porc. 92. Drlg. sh. 2,805 ft.
Glen Harroun's No. 1 Green & Manning, Juan J. Garza Falcon Porc. 81. Drlg. 2,068 ft.
Lynes & Robertson's No. 1 Villareal, C. C.S.D.&G.N.R.R. Sur. 241. Loc.
Magnolia Pet. Co.'s No. 3 Guerra, Santa Cruz gr. (La Reforma field). Loc.
Sun Oil Co.'s No. 1 Claude King, C.C.S. D.&R.G.N.G.R.R. Sur. 511. Loc.
Sun Oil Co.'s No. 1 W. G. Lehr, C.C.S.D R.G.N.G.R.R. Sur. T.D. 5,542 ft.; 5½-in. csg. 4,468 ft.
Sun Oil Co.'s No. 1 Rodriguez, Santa Teresa gr. T.D. 7,502 ft.; perf. csg. 6,419-27 ft.; flwg. dist. and wtr.
Syndicate Oil Corp.'s No. 1 Sanchez, Santos Sanchez Sur. 344. T.D. 1,004 ft.

Travis County

J. H. Sprouls and A. G. Hinn's No. 1 A D. Balm, Santiago de Valle gr. T.D. 1,273 ft.
Ralph R. Tanner's No. 1 Felix Cherico, Santiago del Valle Sur. Drlg. serp. 475 ft.

Val Verde County

Joiner Oil Co. et al's No. 1 Clyde Sellers. T.D. 1,848 ft.; S.D.

Victoria County

British American Oil Co.'s No. 1 J. J. Warden, E. McDonough Sur. 10¾-in. csg. 505 ft.; drlg. sh. 3,810 ft.
Colton & Colton's No. 1-D Edwin Fimbel, T.&N.O. Sur. 3. Drlg. 1,500 ft.
Colton & Colton's No. 1 Terrell, J. B. Sideck Sur. T.D. 5,285 ft.; 7-in. csg. 5,284 ft.
Maryland Oil Co.'s No. 1 A. Kolle, C. Sambrano Sur. R.U.
S. W. Richardson's No. 1 Keeran, M. DeLeon Sur. Drk.
S. J. Ryan's No. 1 Bankers Mortgage Co., A. Esparza Sur., Lot 1, Blk. 2. 10¾-in. csg. 601 ft.; S.D. 6,003 ft.
Geo. Smith's No. 1 Reiman, M. Zepeda Sur. Drlg. sh. 3,067 ft.
C. S. Sollars' No. 1 Knolle, Casiano Sambrano Sur. Drlg. sh. 450 ft.
Texas Gulf Prod. Co.'s No. 1 Kester, C. M. Creanor Sur. T.D. 6,881 ft.; perf. csg. 5,883-85 ft.; reperf. 5,103-05 ft.; flwg. dry gas.
Texas Gulf Prod. Co.'s No. 1 Wiseheart, F. Perez Sur. Loc.

Webb County

Cash & Reynolds' No. 2 C. M. Frost, C. C.S.D.&R.G.N.G. Sur. 17. S.D. 1,450 ft.
Glenda Oil Co.'s No. 1 Salvado ranch, Sec. 657, J. V. Borrego gt. Cd. sd. 1,001-08 ft., T.D.; run csg.
H. E. Hall's No. 1 Slator, Mission Oil Co., J. V. Borrego gr. T.D. 100 ft.
Locke Purnell's No. 2 Kirkpatrick, C.S. D.&R.G.N.G.R.R. Sur. 57. S.D. 1,805 ft.
M. L. Massingill's No. 2 Kirkpatrick, C. C.S.D.&R.G.N.G. Sur. 59. Loc.
Sinclair Prairie Oil Co.'s No. 1 Callaghan L. & Cattle Co., B.S.&F. Sur. 585. 12¾-in. csg. 1,508 ft.; T.D. 9,501 ft.; S.D.; abd.
Tide Water Asso. Oil Co.'s No. 8 Bruni, M. Arispe gr.; (deep test, Bruni field). Loc.

Williamson County

Jas. Criswell's No. 1 R. Z. Baker, Theophilis W. Metcalf Sur. Drlg. 270 ft.
C. C. Lanier's No. 1 Guental, Harry Cooke Sur. Drlg. 1,530 ft.
C. D. Lane's No. 1 Krieg, H.T.&B. Sur. 3. Drlg. L. 1,410 ft.
Richardson & Lefors' No. 1 Kutzschbach. P. J. Mahan Sur. 115. Drlg. clk. 665 ft.

Wilson County

W. D. Moore et al's No. 1 Lorenz, Morris May Sur. S.D. 75 ft.

Zapata County

Jack Giblin et al's No. 1 Haynes, Villa gr. Loc.
Hawkeye Pet. Co.'s No. 1 Uribe, J. V. Borrego Sur. Cg. wtr. sd. 1,405 ft.
O. W. Killam's No. 4 Hinnant, Martha Hall Sur. 613. T.D. 1,697 ft.; abd.
H. F. Wilcox O. & G. Co.'s No. 6 Gilliam, Pedro Mesa Sur. 12. T.D. 3,921 ft.; run csg.

Zavala County

W. H. Holland et al's No. 1 Cuellar, J. M. Cuellar Sur. 248. S.D. 1,650 ft.
H. F. Wilcox O. & G. Co.'s No. 1 Voigt, Jas. Crabtree Sur. 30. Loc.

WEST TEXAS WILDCATS

Andrews County

Helmerich & Payne, Inc.'s No. 1 University, Sec. 11, Blk. 11, University Sur.; 5,500-ft. test. Drlg. below 4,300 ft. with 400 ft. O.I.H.

Concho County

Floyd Dodson's No. 1 Wilson, Thomas Green Sur. 1; 3,500-ft. test. S.D.; csg. 3,398 ft.

Crane County

Gulf Oil Corp.'s No. 5 M. B. McKnight, Sec. 1, Blk. 21-B, P.S.L. Sur. Drlg. 6,414 ft.
Gulf Oil Corp.'s No. 1-F University, SE SE Sec. 22, Blk. 31, Univ. Sur. C.&P.
Gulf Oil Corp.'s No. 12 Waddell, Sec. 30, Blk. 26-B, P.S.L. Sur. 12-in. 532 ft.; S.O. 3,215-20 ft.; S.S.G. 3,635 ft.; 8-in. csg. cmtd. 3,713 ft.; S.O. wtr. 3,763 ft.; tstg. 3,780 ft., mostly wtr.; drlg. 4,005 ft.
Gulf Oil Corp.'s No. 1 Waddell, Sec. 5, Blk. 24-B, P.S.L. Sur. Drlg. 3,400 ft. with 700 ft. O.I.H.; made 3 bbl. hourly at 3,328 ft.

Crockett County

Finance Oil Co.'s No. 1 Hoover, NW cor. SE Sec. 10, Blk. 1, G.C.&S.F. Sur. Loc.
Gregory & McCandless' No. 1 Shannon estate, 1,787 ft. from S and 3,107 ft. from E lines of Lge. 3, Archer C.S.L. Sur. Bldg. road.
Lewis & Shannon's No. 1 Noelke, SW cor. NE Sec. 30, Blk. GG, H.E.W.T. Sur. Top Yates sand 900 ft.; S.S.G. 995 ft.; W.O.C. 7-in. 1,015 ft.
M. & M. Drlg. Co.'s No. 1 G. Bouscaren, SE cor. NW Sec. 29, Blk. G.G., H.E.& W.T. Sur., 1 mi. N of Soma discovery well; prep. D.D. below 500 ft.; last report.
Mauldin & Solmon's No. 1 Noelke, SE cor. Sec. 56, Blk. G.G., H.E.&W.T. Sur., ¾ mi. NW of Soma discovery well, Prep. spud.
Moore Explin. Co.'s No. 1 A. C. Hoover, Sec. 16, Blk. 1, G.C.&S.F. Sur. C.O. cavings at 535 ft.; prep. resume drlg.
Moore Explin. Co.'s No. 1 Noelke, Sec. 10, Blk. G.G. Made 7 B.O.P.D. swbg. from 2,150-2,233 ft.; drlg. 2,371 ft.
Soma O. & G. Synd.'s No. 1 W. T. Noelke, NW part Sec. 30, Blk. GG, H. E.&W.T. Sur. Hit sat. at 1,035 ft.; 60 B.P.H. with 40,000,000 cu. ft. gas; bldg. storage; est. 50,000,000 cu. ft. gas and 788 B.O.P.D.

Dawson County

Ray Albaugh's No. 2 Robinson, NW NW Sec. 54, Blk. M. E.L.R.R. Sur. R.U.S.T. 4,900 ft.; top lime 4,640 ft.

Ector County

Forest Dev. Corp.'s No. 1 W. P. Edwards, 467 ft. from N and E lines of Sec. 19, Blk. 43, Twp. 3s, T.&P. Sur. Loc.
M. A. Grisham et al's No. 1 R. B. Cowden, 600 ft. from N and E lines, Sec. 4, Blk. 45, Twp. 1n (deep test), T.&P. R.R. Sur. P.B. 4,490 ft.; T.D. 6,090 ft., made 144 B.O. in 12 hrs.; testg.

Gaines County

Richmond Drlg. Co. et al's No. 1 G. R. Brumley, NE NE Sec. 17, Blk. 12-A, P.S.L. Sur. Drlg. 3,375 ft.

Howard County

R. M. Huff's No. 1 E. W. Douthitt, 330 ft. from W and 2,310 ft. from S lines of Sec. 116, Blk. 29, W.&N.W. Sur. Loc.
M. L. Richards' No. 1 Thelma J. Cole, SE NW Sec. 12, Blk. 26, H.&T.C. Sur. 3,500-ft. test. Loc.

Hudspeth County

Haymon Krupp Oil & Ld. Co.'s No. 1 Briggs, Sec. 24, Blk. 73, Twp. 7, T.& P. Sur. C.O. 6,175 ft.

Mitchell County

B.R.S. Oil Co.'s No. 1 M. A. Berry, 407 ft. from S and E lines of Sec. 83, Blk. 97, H.&T.C. Sur. M.I.M.
Dockery & Robbins' No. 1 C. G. Crawford, SW SW Sec. 13, C. A. O'Keefe subd. Spdg.
J. B. Ewing's No. 1 L. A. Strain, 330 ft. from N and 2,970 ft. from W lines of Sec. 63, Blk. 97, H.&T.C. Sur. Loc.
Ewing & Hanes' No. 1 G. I. Grable, Sec. 105, Blk. 3, H.&G.N. Sur.; 1,500-ft. test. Drlg. 1,755 ft.
N. V. Hilburn's No. 1 B. W. Jackson, NE cor. NW Sec. 82, Blk. 97, H.&T.C. Sur., in same section as No. 1 Strain. S.D. 50 ft.; prep. D.D.
N. V. Hilburn's No. 1 E. T. Strain, Sec. 82, Blk. 97, H.&T.C. Sur. S.D.O. 1,790 ft.; drld. sat. 1,706-32 ft. and 1,736-39 ft.; est. 4 B.O.P.D. naturally; tstg.

Pecos County

B. McCandless and General Crude Oil Co.'s No. 1 Virginia W. Crockett, Sec. 5, Blk. 110, T.C.R.R. Sur. T. Ellenburger 4,401 ft.; tstg. est. 6,000,000 cu. ft. gas after acd.; rng. tbg.; T.D. 5,479 ft.; est. 4,000,000 cu. ft. gas and 365 B.O. P.D.; made 531 B.O. in 5 hrs.; S.I.
R. G. Pattillo's No. 1 P. E. O'Neal, SW SW Sec. 74, Blk. 10, H.&G.N. Sur., 5,000-ft. test. Spud. and S.D.
Plymouth Oil Co.'s No. 1 Richard Levy, SW cor. Sec. 104, Blk. 8, H.&G.N. Sur. Drlg. below 3,340 ft.
H. H. Sides' No. 1 Blackstone-Slaughter, Sec. 29, Blk. 129, T.&St.L. Sur., 1,050 ft. W, 250 ft. S lines of section. Drlg. 905 ft.

Presidio County

H. D. Wilcox's No. 1 C. E. Conring, 500 ft. from the N and 2,080 ft. from the E lines of Sec. 102, Blk. 4, G.H.&S.A. Sur. Loc.

Reagan County

R. E. Ringo's No. 1 fee, 1,320 ft. from N and W lines of Sec. 22, Blk. K, 3,500-ft. test. Loc.

Reeves County

Roy Johnson's No. 1 H. L. Perkins. Drlg. 705 ft.

Scurry County

Coffield & Guthrie, Inc.'s No. 1 J. W. Moar, Sec. 334, Blk. 97, H.&G.N. Sur., NW Sec.; 4,500-ft. test. Drlg. 3,497 ft.
Ordovician Oil Co.'s No. 1 O. L. Burney, NW NW Sec. 146, Blk. 97, H.&T.C. Sur. Drlg. 870 ft.

Stonewall County

Shell Oil Co., Inc.'s No. 1 Smith, Sec. 143, Blk. 1, H.&T.C. Sur. Top Mississippian at 6,007 ft., top saturation at 6,015 ft. and drilled to T.D. 6,028 ft. in saturation; flwd. 280 bbl. oil in 24 hrs.; prep. cmt. csg. for test. C.O. 5,995 ft.

Terrell County

E. M. Thomasson's No. 2 Bates, Sec. 30, Blk. 1, I.&G.N. Sur. Prep. abd. 1,531 ft.

Terry County

Denver Prod. & Ref. Co.'s No. 1 Ima Lewis, SE SE Sec. 62, Blk. DD, J. H. Gibson Sur. W.O.R. 165 ft.
J. M. Welborn's No. 1 W. E. Bailey, NW NW Sec. 103, Blk. 4-A, C.M.&R.R. Sur., 5,400-ft. test. Loc.

Tom Green County

B. C. Mann's No. 1 Joe Funk, 330 ft. N, 1,650 ft. E lines, Sec. 34, Blk. 5, H.& T.C. Sur. U.R. at 1,370 ft.; prep. P.B.; T.D. 1,562 ft.; P.B. and perf. csg. 1,121-29 ft.; bailed 20 B.O. in 24 hrs.; pmp. 64⅓ bbl. in 10½ hrs. for official gage; pay from 1,121-29 ft. in Blaine lime.
Dan Short's No. 1 J. G. Davidson, 2,161 ft. from SL, 2,493 ft. from NW cor. L. P. Moore Sur. S.S.O.&G. 2,660 65 ft.; S.D. for csg. at 3,410 ft.

Upton County

B. C. & D. Dev. Co.'s No. 1 Richard Owens, NE NW Sec. 91, Blk. Y, G.C. &S.F. Sur. S.P. and S.D. to R.U.R.

Ward County

Atlantic Ref. Co.'s No. 1 Wickett-University, Sec. 12, Blk. 16, University Lds. Sur., 1,980 ft. N and E lines of section. Prep. D.D. 2,733 ft.; S.S.O. 2,570-2,677 ft.; est. 380,000 cu. ft. gas; flwd. 30 to 40 bbl. oil hourly 2,892 to 2,907 ft.; flwd. 445 B.O. and 1,487 B.W. in 24 hrs.; made 458 bbl. oil and 357 bbl. water in 24 hrs.
Gulf Oil Corp.'s No. 5 Wristen, Sec. 13, Blk. 5, H.&T.C. Sur.; scheduled Ordovician test. Drlg. 7,325 ft.
Kenneth Slack's No. 1 Bird Hayes, Sec. 148, Blk. 34, H.&T.C. Sur. T. Delaware 5,003 ft.; S.D. 5,010 ft.; T. Dela. sd. and hit est. 15,000,000 cu. ft. gas at 5,050 ft. and gas ignited; making 10,000,000 cu. ft. gas daily; under control; fire put out; prep.; S.D.R. 5,063 ft. trol; fire put out; prep. S.D.R. 5,063 ft.

Winkler County

Gulf Oil Corp.'s No. 130 O'Brien, SE SW Sec. 11, Blk. F, G.M.M.B.&A. Sur. R.U.R.
Gulf Oil Corp.'s No. 1-A Scarborough, Sec. 7, Blk. 22-C, P.S.L. Sur., 1 mile N of Keystone field. Drlg. 4,010 ft.

E. C. TEXAS WILDCATS

Anderson County

Phillips Drlg. Co.'s No. 1 Susie Hanks, W. C. Collingsworth Sur., 13 mi. W of Franks. Drlg. 2,200 ft.

Angelina County

Arkansas Fuel Oil Co.'s No. 1 Carter-Kelly, T.&N.O. Sur. 4. Drk.
K. L. McHenry's No. 1 Redditt-Fairchilds. 2,700 ft. S and 1,200 ft. E lines of T.&N.O. Sur., 10 mi. SE of Copestown. Drlg. 2,457 ft.
Summerall-Harris' No. 2 G. E. Condra, D. W. Maroney Sur., ½ mi. W of Huntington. S.D.O. 615 ft.

Camp County

W. C. McGlothlin's No. 1 Venters, S. Wright Sur., 3 mi. SE Leesburg. R.U. to D.D. to Pett. sone; prep. set csg. to test show in Pett. L. 7,943-90 ft.; had 47 ft. of sat. and por.; S.D. for title trouble at 8,087 ft.; well has not been opened.

Freestone County

C. F. W. Young's No. 1 Ray Simmons, M. DeCantona Sur., 1½ mi. W of Simmsboro. S.D.O. 3,500 ft.

Gregg County

Roger Lacy's No. 1 Lacy, S. P. Ford Sur., 3 mi. SW of Longview; deep Trinity gas test. Made 80,000,000 cu. ft. gas daily based on 4-hr. flow; S.I. pressures of 3,000 lb. on csg. and 2,800 lb. on tbg.; T.D. 7,308 ft.; tstg.

Henderson County

Manning & Pickens' No. 1 T. H. Bell, D. Muckleroy Sur., 6 mi. SW of Mabank. R.U.

Houston County

Elmer Hay, Tr.'s No. 1 Starr Pope, J Forbes Sur., 2 mi. S of Lovelady, NW cor. 162-ac. tr. S.D.O. 790 ft.

Kaufman County

T. G. Shaw, Tr.'s No. 1 Angus Wynne, B. S. Newman Sur., 8 mi. E. Kaufman. lower Trinity test. T. anhy. 5,934 ft.; drlg. 6,055 ft.

Nacogdoches County

Melrose Oil Co.'s No. 1 C. N. Wilson, J.

Navarro County

W. H. Warren's No. 1 L. Grey, E. Powers Sur., 9 mi. SE of Kerens. S.D. 660 ft.; T.D.

Robertson County

Rhett Wilder's No. 1 Moise Cerf., J. Erwin Sur., 7 mi. S of Franklin. S.D.O. 1,611 ft.

Rusk County

J. Z. Werby's No. 1 L. G. McMillain, W. F. Allison Sur., 6 mi. SE of New Salem. Drlg.

A. O. Whittington's No. 1 Kangerga Bros., Ign. Castro Sur., 9½ mi. N and slightly E of Pirtle. Drlg. 2,846 ft.

Smith County

Carmerson Corp.'s No. 1 T. Simpson, R. Walter Sur., 3 mi. NE of Winona, SE cor. of 1,234-ac. tr. Cg. 4,872 ft.

Van Zandt County

J. B. Daniels No. 1 W. R. Odom, J Garcia Sur., 4 mi. NE of Mabank. S.D.O. 4,042 ft.

E. L. Shackelford's No. 1 E. J. Combs, J. Wright Sur., 3½ mi. NW of Grand Saline. S.D. 54 ft.

EAST TEXAS

(Border Counties)

Cass County

Joe Griffin's No. 1 W. H. Daniel, 715 ft. EL, 360 ft. SL, 101-ac. tr., W. Pittman Sur. Drlg. 2,540 ft.

K. E. Jennings' No. 1 H. T. Wood, Sec. 23-18-28. Set surf. csg.; W.O.C.

Harrison County

Ark. La. Gas Co.'s No. 1 Isaac, Little Sur. Drlg. sh.&L. 6,157 ft.

Fohs Oil Co.'s No. 1 M. J. Hall, 66-ac. tr. O. H. P. Bodine Sur. Set surf. csg. 300 ft.; W.O.C.

Marion County—Other

John Coats' No. 2 Ida Burr, 2,740 ft. S, 330 ft. W, NE cor. J. G. Reeves Sur. R.U.

Jules Constantine's No. 1 S. Hart, 435 ft. N, 330 ft. E, SW cor. 25-ac. tr., G. Coore Sur. M.I.M.

B. I. Daniels' No. 1 T. O. Livingston, G. Coore Sur. T.D 2,330 ft.; W.O. csg

T. B. Donnell's No. 1 E. W. Easterling, 330 ft. S, 1,400 ft. W. NE cor. 200-ac. tr., M. G. Nall Sur. T.D. 2,341 ft.; set 5½-in. csg. 2,234 ft.; pmpg. S.W. 2,341 ft.

J. M. Horne's No. 1 W. F. Singleton, 1,331 ft. EL, 50 ft. NL, J. O. Jackson Sur. Set 5½-in. csg. 2,267 ft., T.D.

H. T. Manning's No. 1 T. O. Livingston, G. Coore Sur. M.I.M.

J. D. Reynolds' No. 5-B Terry est., W. Coore Sur. T.D. 2,350 ft.; set 5½-in. csg. 2,316 ft.; W.O.S.R.

Roosth & Genecov's No. 1 T. O. Livingston, 300 ft. SW cor. 8-ac. tr., G. Coore Sur. R.U.

Sentinel Oil Co.'s No. 1 W. Taylor, 700 ft. N, 325 ft. W, SE cor. B.B.B.&C. R.R. Sur. Set 10-in. csg. 45 ft.; set 5½-in. csg. 2,229 ft.; tstd. dry 2,347 ft.; drlg. 2,477 ft.

Marion County—Rodessa

Holcomb & Thomason's No. 1-A Madine, 400 ft. WL, 467 ft. NL, 33.6-ac. tr., A. D. S. Coy Sur. Set 9⅝-in. csg. 1,840 ft.; Hill sd. 5,979 ft.; Gloyd 6,092 ft.; set 6-in. csg. 6,118 ft.; perf. and acd. 6,096-6,112 ft. and tstd. est. 30,000,000 cu. ft. gas; S.D.; W.O.; T.D. 6,118 ft.

Sabine County

Sterm & Womack's No. 1 I. K. Kieth Southwestern Lands, 400 ft. SL, 500 ft. EL, 53-ac. tr., L. Grace Sur. M.I. rig.

Shelby County

Earl McDaniels et al's No. 1 J. S. Swann, 470 ft. EL, 1,400 ft. SL, 100-ac. tr., Ann Gray Sur. T.D. 2,378 ft.; 9⅝-in csg. 585 ft.; W.O.C.

P. & B. Oil Co.'s No. 2 W. C. Windham, A. K. English Sur. Set 10-in. csg. 170 ft.; drlg. L.&sh. 2,513 ft.

W. C. Parker's No. 1 F. G. Willey, 480 varas NL, 240 varas EL, 94-ac. tr., A. K English Sur. Set 5½-in. csg. 3,330 ft.; W.O.C.

WEST CENTRAL TEXAS DISTRICT

Brown County

A. M. Stalcup's No. 1 J. C. Morris, 900 ft. S, 700 ft. E lines of Morris tr. in John Goodwin and W. B. Hester Surveys. S.D. csg. 972 ft.

Callahan County

N. D. Gallagher's No. 1 E. Grisson. Spt. Sec. 2, Blk. 8. S.P. Sur. Rng. 10-in. csg. 691 ft.

E. Johnson's No. 3 M. Hughes, SE cor. NE NE Sec. 127, B.B.B.&C. Sur. Drlg. 870 ft.

H. W. Lee's No. 1 Mrs. Murray Harris, SW cor. NW SW Sec. 99, B.B.B.&C. Sur.; 1,350-ft. test. Loc.

C. A. Redmond's No. 1 H. T. Moore, SE cor NE Sec. 9, Blk. 6, S. P. Sur.; 2,000-ft. test. P.B. 1,843 ft.; shot 1,834-43 ft.; C.O.

J. L. Reeves' No. 1 N. A. Estes, SW¼ Sec. 4, Blk. 8, S.P. Sur., 2½ mi. S of Bowles pool. M.I.M.

Coleman County

Anzac Oil Corp.'s No. 1 McCord, 2,200 ft. E, 2,196 ft. S of B.B.B.&C. Sur. Drlg. 1,904 ft.

J. C. Ort's No. 1 Emet Walker, SE cor. Hicks Sur. W.O.C. 700 ft.

McKissick's No. 1 Morris, 330 ft. N, 1,582 ft. W lines, Blk. 2, G.H.&H. Sur. Prep. test; Gardner sd. topped at 3,530 ft. with sat; flwg. est. 5,000,000 cu. ft. gas and 20 B.O.P.D.; prep. D.D.

Coryell County

Kistler O. & G. Co.'s No. 1 Barnes, 360 ft. SE line, 3,700 ft. NE line of H. Farley Sur., 3 mi. NE of Gatesville; 2,500-ft. test. S.D.O. 852 ft.

Eastland County

Burton-Womach's No. 1 J. T. Collins, NE NW Sec. 11, Blk. 1, H.&T.C. Sur.; Ellenburger lime test. M.I.M.

Dobbs Oil Corp.'s No. 1 Mrs. R. L. Poe, 1,320 ft. from S and E lines. of SE¼ Sec. 37, Blk. 3, H.&T.C. Sur. W.O. csg. 1,000 ft.

Dobbs Oil Corp.'s No. 1 Thomasson-S. H. Key Sur., 330 ft. from N. 846 ft. from E line of 80-ac. tr. T. Caddo 2,560 ft.; S.S.O.&G. 2,570 ft.; set 7-in. 2,570 ft.

Steele & Black's No. 1 B. B. Poe, 150 ft. N and E lines, SE¼ Sec. 6, Blk. 2, H.&T.C. Sur.; 900-ft. test. Drlg. 400 ft.; (cor.).

Erath County

Dillingham's No. 1 Morning. C.O. to D. D. 3,450 ft.

T. G. Jackson's No. 1 J. W. Taylor, Prater Sur., Abst. 1029, 4 mi. NE of Desdemona. Est. 15 to 20 B.O.P.D. at 3,360-75 ft.; S.D. 3,395 ft.; not treated. rig burned; R.U.M. 3,395 ft.

E. H. Young's No. 1 J. B. Mills, J. Harry Sur., 5 mi. NW of Dublin; 3,500-ft. test. M.I.M.

Hamilton County

A. J. Caldwell's No. 1 W. W. Jones, 1,002 ft. from NE, 150 ft. from SE lines of W. H. Crowder Sur. Drlg. 2,655 ft.

Wallace & Wallace's No. 2 C. E. Lund, C S½ E 20 ac., N½ SW¼, R. J. Bailey Sur. 51. Csg. 300 ft.; S.D. csg. 3,265 ft.; T. Marble Falls 3,245 ft.; S.D.O. 3,505 ft.

Jones County

Fain-McGaha Oil Corp. and Ungren & Frazier's No. 1 W. G. Swenson, J. McGrew Sur. 245; 2,650-ft. test. Rng. 8¼-in. csg.; wtr. at 1,305 ft.; T.D. 1,520 ft.

J. C. Hunter's No. 1 J. Sayles, SE N½ Subd. 8, R. Smith Sur. 192, just NE of Hawley; 3,300-ft. test. Drlg. 1,345 ft.

Parker County

Brown & Gardner Bros.' No. 1 Gilbert T.&P. Sur., Abst. 1958. Tstg. gas; C.O. 100 ft. off bttm.; csg. set 3,905 ft.; drlg. 4,075 ft.

C. F. Carter's No. 1 E. F. Yeager, 1,000 ft. from N, 300 ft. from E lines of C. H. Atkinson Sur.; 1,000-ft. test. Loc.

W. M. Holland and C. Leidecker's No. 1 G. W. Keeling, F. Lidely Sur., Abst. 829, 1½ mi. W of Springtown; 3,500-ft. test. Drlg. 600 ft.

Runnels County

Davis' No. 1 Summers, W½ of tr. in Day Ld. & Cattle Co. Sur., W of Beddo field. H.F. S.W.; may P.B.; S.D.O. 3,624 ft.

Homer Price's No. 1 Williams, C S½ Sec. 26, D. Diaz Sur., N outpost to Beddo field. R.U.R. 2,561 ft.

Shackelford County

T. L. Blanton's No. 1 W. F. Tucker, SW Sec. 552, T.E.&L. Sur. Loc.

John E. Carson's No. 1 L. A. Elliott, 660 ft. S and E lines, Sec. 48, B.A.L. Sur.; 3,650-ft. test. Drlg. 1,428 ft.

Georgian Oil Corp.'s No. 1 Black ranch C NE¼ of T.E.&L. Sur. 300, 10 mi NE of Albany; Ordovician test. T.D. 4,825 ft.; P.B. to Caddo L. for test at 3,860-3,915 ft.; T. Ellenburger 4,730 ft.; P.B. 3,915 ft.; treated with 1,000 gal.; S.D.O. after no results from acd.

F. N. Palm's No. 1 M. E. Daniels, SW cor. NE Sec. 16, E.T.R.R. Sur., 800-ft. test. Drlg. 201 ft.

Stephens County

Carey's No. 1 Crudington, SE cor. T.E. &L. Sur. 1268, 5½ mi. S of Stribling field. W.O.C. at 3,361 ft.; S.O. from 3,362-64 ft.; drlg. 3,622 ft.

Jones Bros. Drlg. Co.'s No. 1 T.X.L., 660 ft. N and E lines SE Sec. 3, Blk. 3, S.P. Sur.; 4,050-ft. test. Drlg. 3,990 ft.

Panhandle Ref. Co.'s No. 1 Frank Magers, SE Sec. 1, Blk. 3, S.P. Sur., 1¾ mi. N of Fagg area. Drlg. 4,000 ft.

Pitzer & West and Brazos-Young Oil Corp.'s No. 1 H. Compton, SW SW Sec. 9, O.A.L. Sur., 1 mi. SE of Loving pool; 3,600-ft. test. P.B. 3,535 ft.; drld. out to 3,590 ft.

J. R. Tolbert's No. 1 W. L. Martin, NW cor. NE¼ Blk. 1335, T.E.&L. Sur., 1½ mi. SW of Fagg area. Drlg. 3,000 ft.

Taylor County

Yehudi Oil Co.'s No. 1 J. Bettes, R. Ortiz Sur. 19; 2,500-ft. test. Drlg. 1,483 ft.

Hose's No. 1 Bond, NE NE Sec. 40, Blind Asylum Lds., 2 mi. SW outpost to Bowles field S.R. 4,720 ft.

NORTH TEXAS WILDCATS

Archer County

W. H. Gant's No. 1 A. Vogtsberger, Sec. 3, G. E. Co. A-146 Sur.; 5,200-ft. test. O.S. 4,659-71 ft.; L.S.O. 5,257-69 (cd.) ft.; cmtd. 6⅝-in. at 4,651 ft.; swbd. 16 B.O. in 16 hrs.; S.D.O.

Baylor County

Paul B. Scott et al's No. 1 C. H. Farr, Sec. 228, T.&N.O. Sur.; 3,100 ft. test. Drlg. 3,140 ft.

R. T. Myers' No. 1 W. H. Portwood, Sec. 19, H.&T.C. Sur., Blk. 45. Drlg. 200 ft.

Rogers' No. 1 Howe, J. Howe Sur., Abst. 572. Drlg. 600 ft.

Clay County

Bridwell Oil Co.'s No. 4 Halsell, Blk. 17, W.C.R.R. Sur. Drlg. 5,660 ft.

L. T. Burns' No. 1 Tom Watson, Sec. 2631, T.E.T. Sur.; (3½ mi. SE Shell's Henderson discovery). Set 100 ft. 10-in.; drlg. 3,400 ft.

Costley's No. 1 Ed Bevering, Sec. 4, B. B.B.&C. Sur., Abst. 384. Spdg.

Alexander Goldsmith's No. 1 Republic Nat. Gas Co., 312 ft. N, 495 ft. W lines of Blk. 14, Parker Co. Sch. Ld. Sur., 1 mi. S of town of Petrolia; 4,500-ft. test. 6⅝-in. 2,402 ft.; perf. csg. 1,600-10 ft.; C.O.

Hardeman County

Norris & Gilbert's No. 1 Robert Weekley, SW SE Sec. 87, Blk. 16, H.&T.C. Sur. S.D.R. 3,275 ft.

Jack County

R. A. Conkling's No. 1 M. Hoofle, A. James Sur., Abst. 318, 3 mi. S Antelope, 3,500-ft. test. Drlg.

Montague County

British Am. O. P. Co.'s No. 1 J. A. Martin, Sec. 27, H.&T.C. Sur.; 6,000-ft. test. 6⅝-in. at 5,680 ft.; sat. conglomerate 5,680-95 ft.; W.O.C.

Harvey Drlg. Co. et al's No. 1 D. A. Threadgill, Sec. 10, Jack Co. Sch. Ld. Sur. A-390; 6,000-ft. test. Drlg. 5,070 ft.

Sinclair Prairie's No. 1 T. H. Milam, Lot 54, A. Beason A-20 Sur.; 6,000 ft. test. Drlg. 4,430 ft.

Sinclair Prairie Oil Co.'s No. 1 G. Whaley, SW cor. of N½ of T. R. Jackson Sur., Abst. 394; 6,000-ft. test. Drlg. 3,444 ft.

Wichita County

Consolidated Oil Co.'s No. 1 E. M. Barnes K, Sec. 11, Blk. 7, H.&T.C. Sur. 6⅝-in. csg. at 4,336 ft.; saturation from 4,336-70 ft.; W.O.C.

Wilbarger County

Amerada Pet. Corp.'s No. 1 B. Goodpasture, Sec. 35, H.&T.C. Sur., Blk. 15. 8,000-ft. test. Sat. lime 4,407-20 ft.; 600 ft. oil and 150 ft. mud on 60-min. D.S.T.; Drlg. 6,060 ft.

Young County

Commodore Oil Co.'s No. 1 Clinton Realty Co., Sec. 2,384 ft. T.E.&L. Sur. Drlg. 1,744 ft.

K. R. March's No. 1 Ed Burton, NE cor. Blk. 99, J. A. True Sur., Abst. 1640, 4 mi. SE Graham; 4,250-ft. test. 4,500 gal. acid 3,952-4,014 ft.; 1,800 ft. O.I.H.; testing.

A. T. Strong's No. 1 Craig heirs, N. Lynch Sur. Drlg. 2,513 ft.

TEXAS PANHANDLE

Childress County

Texas Co.'s No. 1 P. B. Smith, NW NW Sec. 97, Blk. 9, H.&G.N. Sur., 7,500-ft. contract depth. Spd. to 500 ft. and R.U.R.

Hall County

Humble Oil & Ref. Co.'s No. 1 A. D. Weaver, SW NW Sec. 51, Blk. 1, S.P Sur.; 7,500-ft. test. R.U.R. after spdg. to 336 ft.

Hutchinson County

Jake Phillips' No. 1 McCloy, Sec. 101, Blk. 5-T, T.&N.O. Sur. Hole filled 2,000 ft. with oil; tstg.

Ochiltree County

James R. Macon et al's No. 1 W. R. Norris, SW SE Sec. 212, Blk. 48, H.&T.C. Sur. T.D. 6,274 ft.; test sec. at 5,000 ft.; est. 6,000,000 cu. ft. gas on D.S.T.; tstg.; bailing 6,274 ft.; csg. cmt. at 5,000 ft.; R.U. control head for testing at est. 6,000,000 cu. ft. gas; plug drilled; tstd. wtr.; rng. more cement to 5,070 ft.

Potter County

Canadian River Gas Co.'s No. 1 City of Amarillo, in city limits just north of city. T.D. 5,112 ft.; prep. P.B. to 3,800 ft. for test.

Sherman County

I.T.I.O. Co.'s No. 1 S. C. Bryant, C NW¼ Sec. 369, Blk. T-1, T.&N.O. Sur. W.O.C. 7-in. 4,100 ft.; T.D.

Swisher County

Krupp-Flaherty's No. 1 Kleen, Sec. 120, Blk. 10-M, B.S.&M. Sur. S.D.O. 800 ft.

CRUDE-OIL PRICES IN REPRESENTATIVE FIELDS

Complete crude-price schedules are now being published in the first issue of each month. The last complete schedule was published in the May 2 issue. All changes in crude-oil-price schedules will be published completely in the first issues following the announcement of the changes. Following are representative crude-price schedules in barrels (42 gal.):

East Texas	$1.10
Conroe	1.27
Tepetate, Louisiana	1.03
Smackover, Arkansas, heavy	.73
Illinois basin	1.05
Pecos County, Texas	.78
Lance Creek, Wyoming	.77
Bradford, Pennsylvania	2.50

Gravity Schedules

Top prices include all gravities above grades designated, and low prices include all gravities below grades designated:

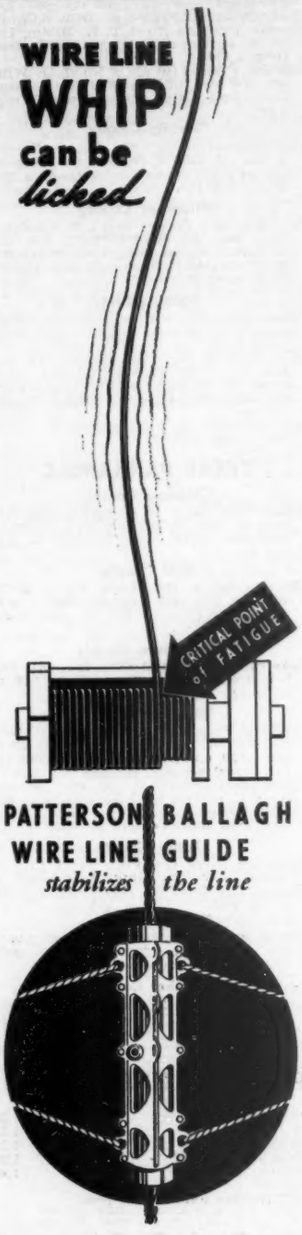
	Signal Hill, California*	Oklahoma, Kansas	Gulf Coast Texas
14-14.9	$.065	....	....
15-15.9	.65	....	....
16-16.9	.65	....	....
17-17.9	.65	....	....
18-18.9	.65	....	....
19-19.9	.69	....	$0.88
20-20.9	.73	$0.70	.88
21-21.9	.78	.72	.90
22-22.9	.82	.74	.92
23-23.9	.86	.76	.94
24-24.9	.90	.78	.96
25-25.9	.95	.80	.98
26-26.9	.99	.82	1.00
27-27.9	1.03	.84	1.02
28-28.9	1.07	.86	1.04
29-29.9	1.10	.88	1.06
30-30.9	1.14	.90	1.08
31-31.9	....	.92	1.10
32-32.9	....	.94	1.12
33-33.9	....	.96	1.14
34-34.9	....	.98	1.16
35-35.9	....	1.00	1.18
36-36.9	....	1.02	1.20
37-37.9	....	1.04	1.22
38-38.9	....	1.06	1.24
39-39.9	....	1.08	1.26
40-40.9	....	1.10	1.28

*Effective February 1, 1940.

Crude-Oil Prices

Led by South Penn Oil Co. all companies buying Pennsylvania Grade crude oil reduced their price 25 cents per barrel effective May 22. The new prices are as follows: Bradford and Allegany, $2.50; Venango-Clarion area, $2.38 to $2.43; southwestern Pennsylvania, $2.15; West Virginia, $2.09; southeastern Ohio, $2.05. Pennzoil buys in the Venango-Clarion district and Quaker State Oil Refining Co. buys in southeastern Ohio. Pure Oil Co. met the South Penn's West Virginia price and Tide Water Associated Oil Co. and Bradford Transit Co. met the Bradford and Allegany price.

The Sohio Corp. which had been paying 95 cents per barrel for oil produced from sands and 85 cents per barrel for oil produced from limestone in southern Wabash County, Illinois, and southwestern Gibson County, Indiana, and in White County, Illinois, increased its posted price to a flat $1 per barrel effective May 25. Increased pipe-line facilities was given as the cause of the increase. The pools affected are North Griffin, South Griffin, Phillipstown, New Harmony and Irons. The production of these pools is estimated at 20,000 bbl. a day.



Note the increasing numbers of these Guides on deep wells. Operators who once use one or two of them as a trial put Patterson-Ballagh Wire Line Guides on the "must" list of necessary equipment. They keep line free from destructive vibration. You can run your line faster. Perfect spooling. Rubber filler blocks form proper sliding cushion; prevent sparks. No falling splinters of metal. Install one as a trial.

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1900 E. 65th St., Los Angeles, Calif.
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Mississippi Leasing Drops; Alabama Wildcat Show

By GEORGE WEBER

JACKSON, Miss., May 27.—Continued lack of success in wildcatting in Mississippi has resulted in a decline in leasing. In the Pickens field of Yazoo County a northeast diagonal offset to the discovery missed the pay, and a south offset was completed. Two wildcat tests are spudding to the northwest of the field, and a third wildcat 3 miles west of the discovery.

Exchange Oil Co.'s No. 1 Dixon, northeast offset to the discovery, has apparently cut a fault, or the pay sand producing Kingwood's No. 1 Wilburn, Pickens discovery, has pinched out to the northeast. No. 1 Dixon cored from 4,851-4,992 ft., recovering sand and shale with only a slight odor in part of the section. Operators were drilling below 5,194 ft.

South of the discovery, Exchange Oil Co.'s No. 2 Wilburn had chalk from 3,935 ft. to 4,350 ft. and oil sand at 4,868 ft., with total depth at 4,873 ft. It is reported to have flowed 530 bbl. in 9 hours through open 2-in. tubing. This may bring additional drilling.

Tinsley

The Tinsley field was extended one location northwest as E. C. Johnson's No. 3-B Brumfield had 17 ft. of Woodruff sand and made an initial gage of 230 bbl. One other well was completed, Union Production Co.'s No. 2 Twiner extending the field one location northeast, with 24 ft. of Woodruff sand and an initial gage of 20 bbl. hourly. Two abandonments occurred on the east, Union's No. 1-B Woodruff, dry at 5,939 ft., and an outpost, J. R. Lockhart and others' No. 1 Brooks, which was temporarily abandoned at 5,236 ft.

In Holmes County Rowan Drilling Co. abandoned No. 1 Smith at 5,827 ft. with no shows and to the west in Humphreys County J. B. Moncrief and others junked and abandoned No. 1 State.

Alabama Show

In the Bayou La Batre area of coastal Alabama W. L. McClanahan's No. 1 J. A. Stafford, SE cor. NW SW Section 24-7s-3w, 8 miles west of Mobile, in Mobile County, has reported a show of gas at 3,475-90 ft. and an oil show at 4,550-72 ft. It is reported drilling below 6,000 ft. In Mobile County Byrd-Frost interests moved derrick to No. 1 Daly-Hardman, NW cor. SE SE Section 2-6s-4w. In Marion County Seaboard Oil Co. is planning to skid and spud again after showing a crooked hole at 645 ft. Choctaw County's active wildcat, Union Producing Co.'s No. 1 McCorvey, after drilling plug at 4,038 ft., drilled out of the old hole.

In Florida St. Mary's River Oil Corp. abandoned No. 1 Hillard Turpentine Co., NW cor. NW SE Section 19-4n-24e, in quartzite at 4,817 ft. after encountering a reported show of oil at 4,795-4,810 ft.

MISSISSIPPI COMPLETIONS

Wildcat—Holmes County

Rowan Drilling Co.'s No. 1 Smith, C NW NE Section 7-14n-1w, dry and abandoned, total depth 5,827 ft., no shows.

Wildcat—Humphreys County

J. B. Moncrief and others' No. 1 State, 2,490 ft. west, 150 ft. south NE cor. Section 9-15n-2w, junked and abandoned at 5,522 ft.

Pickens—Yazoo County

Exchange Oil Co.'s No. 2 M. P. Wilburn and others, 330 ft. west, 990 ft. south of NE cor. Section 31-12n-3e, top oil sand 4,868 ft., total depth 4,873 ft., initial production, 530 bbl. in 9 hours, open 2-in. tubing.

Tinsley—Yazoo County

E. C. Johnston's No. 3-B Brumfield, 423 ft. west, 660 ft. north of SE cor. SW NE Section 2-10-3, total depth 4,816 ft., Woodruff sand 4,795-4,812 ft., 230 bbl., ¼-in. choke. Union Producing Co.'s No. 2 Twiner, C NW SE Section 1-10-3, Woodruff sand 4,813-37 ft., 480 bbl., 32/64-in. choke, tubing pressure 25 lb., total depth 4,875 ft. Union Producing Co.'s No. 1-B Woodruff, C SW NW Section 18-10-2, dry and abandoned 5,939 ft.

Wildcat—Yazoo County

J. R. Lockhart and others' No. 1 Frank Brooks, W½ SE NW Section 17-10-2, temporarily abandoned 5,236 ft.

FLORIDA COMPLETIONS

Wildcat—Nassau County

St. Mary's River Oil Corp.'s No. 1 Hillard Turpentine Co., NW cor., NW SE Section 19-4n-24e, total depth 4,817 ft., quartzite, dry and abandoned.

MISSISSIPPI

Attala County

P. & M. Oil Co.'s No. 1 J. A. McMillin, 300 ft. SW cor. SE SE Sec. 26-13n-5e. Spd. to 25 ft.; S.D.; titles

Clarke County

Ark.-Miss. Oil Co.'s No. 1 Long Bell, C SW NE Sec. 35-3n-17e. Set 10¾-in. csg. 2,194 ft.; T.D. 2,204 ft.; W.O.C.

Copiah County

G. C. Koch's (former Triangle Drilling Co.) No. 1 W. W. Broome. 153 ft. SW cor. SW SE Sec. 1-10n-8e. T.D. 3,628 ft.; S.D.

Grenada County

Schuba Valley Prod. Co.'s No. 1 Connecticut General Life Ins. Co., C NE SE Sec. 28-23n-5e. Drk.

Hinds County

Royal Oil & Gas Co. et al's No. 1 Hinds County Land, NE SW NE Sec. 33-5n-2w. Drlg. bl. sh. 7,539 ft.

Holmes County

Exchange Oil Co.'s No. 1 S. D. Gwin, 2,170 ft. S line, 1,470 ft. E line, Sec. 6-16n-1e. Drlg. 157 ft.

Exchange Oil Co.'s No. 1 W. M. Thurmond, C NW NW SE Sec. 21-15n-3e. Set 10¾-in. csg. 653 ft.; drlg. sd.&sh. 4,295 ft.

Hawkins & Howell's (A. C. Varner's) No. 1 P. S. Jones, Sec. 27-15n-1e. Set 10¾-in. csg. 518 ft.; drlg. ch. 4,263 ft.

A. H. Rowan's No. 1 Eakin, C NW SE Sec. 20-14n-1e. Set surf. csg.; drlg. 2,843 ft.

Issaquena County

W. G. Ray Drlg. Co.'s No. 1 Irby Charping, approx. C NE NW Sec. 29-10n-8w. Set 13⅜-in. csg. 145 ft.; T.D. 5,020 ft.; moved rig off; may move in larger rig to dpn.

Itawamba County

G. C. Grasty et al's No. 1 Ky. Lbr. Co., 1,320 ft. E, 660 ft. S, C Sec. 7-10s-10e. Twisted off D.S.; skd. 24 ft. S and spd.; set 10¾-in. csg. 170 ft.; S.O. 1,500 ft.; T. Trenton L. 1,600 ft.; tstd. gulf wtr. 2,793-97 ft.; ran csg. to 2,795 ft. and shut off sulfur wtr.; bailed S.O. and some gas; drlg. L. 3,213 ft.

Kemper County

M. R. Crabb et al's No. 1 W. T. Caldwell. NW SE Sec. 25-9n-15w. 10¾-in. csg. 86 ft.; set 6-in. csg. 1,320 ft.; T.D. 1,640 ft.; acid. with 1,000 gal.; drlg. sh. 2,493 ft.

Leflore County

Exchange Oil Co.'s No. 1 Wildwood, SE SE NE Sec. 6-20n-1e. R.U.

Madison County

Ralph A. Johnston's No. 1 F. H. Ray, C SE SW Sec. 6-8n-3e. T.D. 2,640 ft.; fsg. stuck D.S. at 1,560 ft.

Monroe County

Willmut Gas & Oil Co.'s No. 1 Rye, 300 ft. N and E C Sec. 22-15n-17e. Set 10¾-in. csg. 625 ft.; drlg. 713 ft.

Neshoba County

J. P. Evans' No. 1 Mary Oliver, C SW Sec. 18-9n-13e. Loc.

Rankin County

M. Lerew's No. 1 E. O. Rainey, C SE NE Sec. 14-5n-1e. M.I.M.

Scott County

Exchange Oil Co.'s No. 1 Newell, Mineral Lease Co., Inc., 330 ft. NW cor. NE SW Sec. 30-7n-7e. Cg. 5,369 ft.

E. L. Martin's No. 1 Adams Edgar Lbr. Co., C S½ SE SW Sec. 25-8n-6e. Drlg. 5,837 ft.

Smith County

Haynes B. Owenby Drlg. Co.'s No. 1 State, C SE NE Sec. 6-2n-9e. Set 10¾-in. csg. 510 ft.; drlg. 5,021 ft.

Tallahatchie County

Gulf Ref. Co.'s No. 1 Cason, C NE Sec. 2-21n-2w. Set 13⅜-in. csg. 153 ft.; drlg. sh. 3,217 ft.

Warren County

H. C. Cummings et al's No. 1 T. H. Morrissey, C E½ W½ NE Sec. 8-17n-2e. T.D. 5,774 ft.; hole bridged 1,250 ft.; sdtrkd. and drld. back in old hole 3,000 ft.; drlg. 5,172 ft. (cor.).

Washington County

Chas. Perkins' No. 1 Gen. American Frams, 2,000 ft. N SE cor. Sec. 9-14n-8w. T.D. 500 ft.; S.D.

Wayne County

Hill & Hill and W. L. Stewart's No. 1 Kalmia Realty Co., C SW NW Sec. 5-7n-9w. Set 16-in. csg. 30 ft., spd. mch.; sd. 1,270-75 ft.; S. dead oil and slight S.G.; drlg. ch.&sh. 6,211 ft.

Yalobusha County

J. E. Green's No. 1 Walter-Goldman, 247 ft. SW cor., SE NW Sec. 23-25n-6e. Drlg. 475 ft.; cd. sds. 260-320 ft. and 400-68 ft.; T.D. 768 ft.; S.D.

Stewart Oil Co.'s No. 1 R. H. Creekmore, C SW NE Sec. 21-24n-7e. O.W.D.D.; O.T.D. 3,188 ft.; S.D.

Yazoo County

Leon Dunn's No. 2 H. H. Pepper, 1224 ft. E, 990 ft. S NW cor. Sec. 26-12n-2e. M.I.M.

Exchange Oil Co.'s No. 1 T. A. Bennett, SW SW SE Sec. 28-12n-2e. Loc.

Exchange Oil Co.'s No. 1 L. B. Dixon C SW SW SW Sec. 29-12n-3e. Missed Pickens pay sd.; drlg. ahead 5,917 ft.

Hassie Hunt's No. 4 A. G. Johnson, C NE NW Sec. 14-10-3. M.I. rig.

Hassie Hunt's No. 1 H. A. Lammons, C SE NW Sec. 1-10-3. Set 10¾-in. csg. 425 ft.; T. chalk. 4,646 ft.; Woodruff sd. 4,818-53 ft.; set csg. and perf. 4,820-53 ft.; completing.

Hill & Hill's No. 1 W. A. Montgomery, C SE SW SE Sec. 24-12n-2e. Spdg.

Sells Pet. Co.'s No. 1 Falkner, C SE NE Sec. 34-9n-4w. Set csg. 1,640 ft.; W.O.C. 2,165 ft.

Slick-Urschel Oil Co.'s No. 6 T. B. Slick, SW cor. SE Sec. 35-10-3. Drlg. sh. and lignite 3,523 ft.

C. L. Thompson, Rowan & Hope's No. 1 Joe Elliott-Mrs. Mary Edwards, 900 ft. S. 2,310 ft. W of NE cor. Sec. 30-10n-3w. Spdg.

Union Prod. Co.'s No. 2-A Friley, C NE SE Sec. 14-10-3. Set 16-in. csg. 57 ft.; Stevens sd. 4,906-14 ft.; D.S.T. 4,902-14 ft.; ⅝-in. bottom and ¼-in. ck. top; tool open 10 min.; no W.P.; recovered 700 ft. oil and 80 ft. oil-cut mud; set 7-in. csg. 4,966 ft.; T.D. 4,969 ft.; W.O.C.

Union Prod. Co.'s No. 11 Stevens, 1,040 ft. SW cor. Sec. 12-10-3. M.I. rig.

Union Prod. Co.'s No. 16 J. Stevens, C NE NE Sec. 12-10-3. Set 10¾-in. csg. 613 ft. Drlg. 1,237 ft.

Union Prod. Co.'s No. 3 Twiner, C NW NW Sec. 1-10-3. Set 10¾-in. csg. 600 ft.; T.D. 4,937 ft.; swbg.

Union Prod. Co.'s No. 7 Woodruff, C SE SE 13-10-3. Set 10¾-in. csg. 602 ft.; T.D. 4,261 ft.; rmg. 4,209 ft.

Whigate Oil Co.'s No. 2 Robertson, S½ NW SE Sec. 20-10-3. Drlg. 1,537 ft.

ALABAMA

Choctaw County

Union Prod. Co.'s (formerly Joe Modisett et al) No. 1 McCorvey, SE cor. SW SW Sec. 20-9n-2w. O.W.D.D.; O.T.D. 7,520 ft.; reamed to bttm.; recmtd.; T. surf. csg.; T.D. 9,650 ft.; drld. plug 4,038 ft. and drld. out of old hole.

Lawrence County

D. V. Mann et al's No. 1 Jackson, NE NE Sec. 30-7s-6w. Set surf. csg.; drlg. 100 ft.

Marion County

Seaboard Oil Co.'s No. 1 Clark et al., 360 ft. W, 660 ft. N, SE cor. SE SW Sec. 28-11s-14w. Shot 638-45 ft. with 130 qt. nitroglycerin; crooked hole; arng. move over and spud.

Market Record of Active Oil Stocks

Compiled by Carl H. Pforzheimer & Co., 25 Broad Street, New York City, Member New York Stock Exchange and New York Curb Exchange

New York Stock Exchange

1940 High	1940 Low	Week ended May 25 High	Week ended May 25 Low	Week ended May 25 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1939	Com. sh. earn. 1938	Com. sh. earn. 1937	1939 High	1939 Low	1938 High	1938 Low
58½	39½	46½	39½	40	Amerada Corp.	788,675	N.P.	50cQ	4-30-40	$2.00	$2.07	$3.04	74½	50	78	55
27⅛	18¼	20⅞	18¼	20¼	Atlantic Refining	2,663,999	$25	25cQ	6-15-40	1.00	1.40	3.51	24⅝	18⅛	27⅝	17⅝
16⅝	8½	10⅞	8½	10	Barber Asphalt Co.	390,223	$10	25c	5-21-40	.25	—.85	1.91	21	10¼	23⅜	12⅛
13⅜	7⅜	8½	7⅜	7⅞	Barnsdall Oil Co.	2,250,344	$5	15c	6-8-40	.90	1.26	.85	19½	11⅛	21⅜	10⅛
8⅛	5½	6⅝	5½	6	Consolidated Oil Corp.	13,751,846	N.P.	20cQ	5-15-40	.80	.55	1.48	9⅞	6½	10¾	7
25	16¾	20⅛	16¾	19	Continental Oil of Delaware	4,862,581	$5	25cQ	6-24-40	1.00	1.10	2.98	31½	19⅞	35¾	21¼
6⅞	3⅜	4¼	3⅜	3¾	Houston Oil	1,098,618	$25	....	10-17-30	....	.83	.94	9⅜	4½	9¾	5
14⅜	9	10	9	10	Lion Oil Refining	435,815	N.P.	25cQ	4-20-40	1.00	2.09	2.17	18⅛	10	25⅛	15⅝
17⅝	11½	13½	11½	12⅛	Mid-Continent Petroleum	1,857,912	$10	40c	6-1-40	.60	.56	2.86	18	11⅛	22⅝	12¼
11	7⅛	8⅝	7⅛	7⅞	Mission Corporation	1,379,245	$10	40c	12-15-39	.65	1.04	1.31	14⅞	8⅜	17⅜	10⅝
9⅜	4⅝	6⅛	4⅝	4⅞	National Supply	1,155,517	$10	....	12-22-37	....	—.79	4.90	15½	5⅝	23	12½
8¾	5¾	6½	5¾	6⅛	Ohio Oil Co.	6,563,377	N.P.	20c	6-15-40	....	.25	1.30	10½	6	14⅜	8⅞
8¼	6	6½	6	6	Pacific Western Oil	1,000,000	N.P.	40c	12-19-39	.40	1.22	1.39	11⅞	7	15⅞	10¼
8½	6¾	6⅞	6¾	6⅞	Pan American Pet. Trans.	4,702,945	$5	....	12-31-37	....	.08	1.18	8¾	5	9¼	6¼
41¾	27⅛	33	27⅛	28¾	Phillips Petroleum	4,449,052	N.P.	50cQ	6-1-40	2.00	2.03	5.42	46½	31¼	44⅝	27¼
22¾	15¼	18	15¼	16¼	Plymouth Oil Co.	1,006,200	$5	35cQ	6-28-40	‡1.40	2.59	2.85	24	17⅛	25⅝	15
11½	7	8½	7	7¼	Pure Oil Co.	3,982,031	N.P.	25c	12-20-39	.25	.38	2.15	11⅝	6⅛	13⅛	8¼
8⅜	5⅞	6⅛	5⅞	6¼	Richfield Oil Corp.	4,010,000	N.P.	50c	12-18-39	.50	.51	.35	10¼	6⅝	9⅞	5
20	11	14	11	13	Seaboard Oil of Delaware	1,244,383	N.P.	25cQ	6-15-40	1.00	1.52	1.97	24⅝	15½	27½	15½
13⅛	8	9	8	8	Shell Union Oil	13,070,625	N.P.	25c	12-20-39	.50	.72	1.44	17¼	9⅞	18⅜	10
23¼	13	16⅜	13	13⅝	Skelly Oil	995,349	$15	25c	1-30-40	.75	2.27	6.07	29½	15½	34⅜	18½
12½	7⅛	8¾	7⅛	8¼	Socony-Vacuum	31,206,071	$15	25cSA	3-15-40	.50	1.29	1.82	15⅛	10¼	16⅜	10⅜
26⅛	17⅝	19¾	17⅝	19	Standard Oil of California	13,004,153	N.P.	25cQ	6-15-40	1.10	2.22	3.17	33⅝	24¼	34⅛	25⅛
29	20⅞	24½	20⅞	20⅞	Standard Oil (Indiana)	15,272,020	$25	25c	6-15-40	1.25	1.82	3.66	30	22¾	35½	24⅝
46½	30	35½	30	31⅝	Standard Oil of New Jersey	26,618,065	$25	1.00†	6-15-40	‖1.25	2.86	5.64	53½	38	58⅜	39⅜
65⅞	47	56	47	49	Sun Oil	2,316,484	N.P.	25c*	6-15-40	1.00	1.07	3.86	66	45¾	65⅛	45
2½	1¼	1⅝	1¼	1½	Superior Oil Corp.	1,388,979	$1	10c	12-28-38	....	.24	.32	3⅝	1⅜	4¼	1⅜
47⅝	33	38⅝	33	34½	Texas Corp.	10,876,882	$25	50cQ	7-1-40	2.00	2.13	5.02	50⅝	32½	49⅝	32⅝
4¼	2½	3	2½	2¾	Texas Gulf Producing Co.	888,146	N.P.	10c	6-15-40	.20	.86	.68	5⅜	3¼	5⅞	2⅝
8⅝	5½	6¼	5½	6	Texas Pacific Coal & Oil	888,236	$10	10c	6-1-40	.40	1.16	1.11	11⅜	7	12½	7
12	9	10⅝	9	9⅛	Tide Water Associated	6,375,253	$10	25c	6-1-40	.80	1.28	2.08	14¼	9½	15⅝	10⅛
17½	12	13½	‡2	12	Union Oil Co. of California	4,666,270	$25	25c	5-10-40	1.05	1.47	2.58	19⅜	15⅛	22½	17⅛
29⅞	22¾	26½	24¼	24½	Union Tank Car Co.	1,177,381	N.P.	45c	6-1-40	1.30	1.16	1.70	24¾	20¼	23¼	20
3⅝	1⅞	2	1⅞	2	Wilcox Oil & Gas	487,568	$5	10c	2-15-40	....	.52	.24	4¼	2⅝	3½	1⅝

*Also 5 per cent in stock. †Includes extras. ‡Also 2 per cent in stock. ‖Also 4 per cent in stock. ‖Also 2½ per cent in stock. ¶Also 1½ per cent in stock. —Deficit.

New York Curb Exchange

1940 High	1940 Low	Week ended May 25 High	Week ended May 25 Low	Week ended May 25 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1939	Com. sh. earn. 1938	Com. sh. earn. 1937	1939 High	1939 Low	1938 High	1938 Low
10¾	5	7	5	5¾	American Republics Corp.	1,308,049	$10	10c	7-11-38	....	—$0.22	$0.27	11¾	5½	11¾	5
3¼	1⅝	1⅞	1⅝	1½	Bridgeport Machine Co.	270,000	N.P.	$1.25	12-30-37	....	—.14	1.90	7¼	2½	10¼	4⅞
43	28	35	31½	31½	Buckeye Pipe Line Co.	200,000	$50	$1	6-15-40	$2.50	2.36	4.02	34⅝	26½	39	22½
117	96	102	96	96	Chesebrough Mfg. Co.	120,000	$25	$1.50Q†	6-24-40	6.00	5.32	6.73	130	108⅝	128	97
6¾	4	5½	4½	5	Cities Service (new)	3,704,067	$10	....	6-1-32	....	.23	1.02	9¼	4¼	11	5⅛
2⅛	1⅛	1⅝	1¼	1⅜	Cosden Petroleum	462,551	$1	....	.....	....	....	.19	2¼	½	2⅝	⅞
24¼	14¾	18	14¾	15½	Creole Petroleum	6,975,383	$5	50cSA†	6-15-40	1.00	1.64	1.61	28	16¾	27½	17½
4⅜	3	3⅛	3	3	Darby Petroleum	351,390	$5	25cSA	1-15-39	.25	....	1.36	7⅛	3⅝	10¼	5½
2	1¼	1½	1¼	1¼	Derby Oil & Refining	263,162	N.P.	....	.....	....	—.91	1.34	2⅝	1½	3½	1½
31	23½	..	..	..	Eureka Pipe Line	50,000	$50	75c	5-1-40	2.00	—.37	—.12	23	15⅛	31	16
39⅞	27	32	27	27½	Gulf Oil Corp.	9,076,202	$25	25cQ	4-1-40	1.00	1.43	3.51	45⅛	29¼	46⅞	33
68	47⅛	51½	48	50	Humble Oil & Refining	8,987,840	N.P.	62½c	7-1-40	2.00	3.98	5.22	71	52½	72⅝	56
12⅜	5⅝	7¾	5⅝	6⅛	Imperial Oil of Canada	26,965,078	N.P.	37½c†	6-1-40	1.00	.96	.98	17	11⅜	19½	14⅛
7¾	5¾	7	6⅛	6¾	Indiana Pipe Line	300,000	$10	10c	5-15-40	.50	.47	1.03	7¼	5½	9⅜	6
19¾	10⅛	11⅜	10⅛	10⅜	International Petroleum	14,324,088	N.P.	75c	6-1-40	1.75	1.98	....	27½	17	31¼	21
2¾	2	2⅛	2	2	Kirby Petroleum Co.	500,000	$1	10c	4-15-38	....	.14	.17	3¾	2⅛	5	2⅛
10¾	7⅝	8⅝	7⅝	7¾	Lone Star Gas	5,553,747	N.P.	20c	4-22-40	.70	.88	1.14	10½	7⅛	10⅜	6⅝
6¼	3¾	4¼	3¾	4	Louisiana Land & Exp.	2,977,449	$1	10c	6-15-40	.35	.45	.58	7⅝	4	9⅜	6½
17	14½	..	..	..	Margay Oil Corp.	149,943	N.P.	25cQ	4-10-40	1.00	2.28	3.26	17	14½	24	16
8½	6½	7	6½	7	Midwest Oil Co.	998,474	$10	45c	6-15-40	.90	.93	1.14	8¾	6⅝	9⅜	6⅝
6¼	4⅞	5	4⅞	5	Mountain Producers	1,593,584	$10	30cSA	6-15-40	.60	.62	.76	6	4⅞	5⅝	4½
13⅛	10⅛	11⅛	10⅛	10⅛	National Fuel Gas	3,810,183	N.P.	25cQ	4-15-40	1.00	.84	.96	14	11¼	14⅝	11½
12½	8¾	10¼	9	9½	National Transit	509,000	$12.50	50c	6-15-40	.85	.88	1.19	9½	7¼	9¼	6⅛
1¼	1	..	..	..	New Mexico and Arizona	1,000,000	$1	1c	12-1-37	....	.02	.02	1⅜	1	2⅝	1⅛
7¾	5¼	5⅞	5¾	5¾	New York Transit	100,000	$5	25c	4-15-40	.40	.16	.49	6	4	4½	3⅛
9⅞	6¾	6¾	6	6	Northern Pipe Line	120,000	$10	40c	6-1-40	.30	.24	.78	7	4½	6	4
5½	2⅝	3¼	2⅝	2⅞	Pantepec Oil	2,857,000	$1	....	.....	....	....	....	7⅝	4	7¾	3½
3¼	1½	1⅝	1½	1⅝	Root Petroleum Co.	336,045	$1	25c	2-1-37	....	.17	—.17	5	1¼	4½	1⅝
2½	1½	1⅞	1⅝	1⅜	Ryan Consolidated	298,931	N.P.	....	.....	....	.29	.46	3	1⅜	4	2⅛
11¾	4⅞	8	7½	8	Southern Pipe Line	100,000	$10	15c	3-1-40	.30	—.27	.85	4⅞	3½	5⅝	3¼
44	28	33¼	28	31	South Penn Oil	1,000,000	$25	37½c	3-29-40	3.00	1.44	4.64	40½	26⅝	39	28⅝
35	22	..	..	..	Southwest Penna. Pipe Lines	35,000	$50	$5	4-1-40	2.00	—.41	.95	23	18	22¼	16½
20⅞	16½	18¼	16½	17⅛	Standard Oil of Kentucky	2,604,790	$10	25c	6-15-40	1.30	1.45	1.80	20⅛	17¼	18⅝	15
41¾	26¼	31½	26¼	26½	Standard Oil of Ohio	753,740	$25	25c	6-15-40	1.50	1.81	3.67	32⅜	17	22⅝	16¼
2	1½	1⅝	1½	1½	Sunray Oil	2,007,076	$1	5c	5-1-40	.10	.23	.42	2⅜	1⅜	3¼	2
2¾	2	2⅜	2	2⅜	Texon Oil & Land	936,024	$2	10c	3-29-40	.10	.56	.51	4	2⅜	5¼	3⅛
3⅜	2	2½	2	2	Transwestern Oil Co.	750,000	$10	....	.....	....	—.12	.48	6	2⅛	7⅝	4¼
2⅛	‖	1¼	‖	1⅛	United Gas Corp.	7,818,959	$1	....	.....	....	—.51	.25	3⅜	1⅛	5¼	2⅝

†Includes extras. —Deficit.

Personal Paragraphs

A. A. CAMERON, independent operator of Houston, Tex., is visiting on the West Coast.

C. B. PETERS, JR., and SAM W. WELLS, independent operators of Tulsa, have moved to Corpus Christi, Tex., where they have opened offices to operate as the Norbia Oil Co.

HENRY LINAM, president of Standard Oil Co. of Venezuela, and A. T. PROUDFIT, manager of eastern Venezuelan operations for the same company, left New York last week returning to South America. While in this country they participated in the annual conference of the executive staff of Standard Oil Co. of New Jersey and its subsidiaries at Seaview, N. J.

E. DeGOLYER, distinguished professor of geology at the University of Texas, was elected to membership on the national board of the National Conference of Christians and Jews at a meeting of the 100 men and women constituting the board in New York.

C. W. TOMLINSON, independent geologist of Ardmore, Okla., delivered an address on the Ardmore basin before the Fort Worth Geological Society at a meeting in Brite College of Texas Christian University in Fort Worth, Tex., Monday evening, May 27.

C. C. CARRELL, traffic manager of Grogan Oil Co., has been named president of the North Louisiana Oil Traffic Association, composed of refiners in the Shreveport area who have united to combat freight-rate disparities that they contend give coastal and South Arkansas refiners a decided advantage.

COLIN REITH, petroleum engineer for Bahrein Petroleum Co., is now at his home in California on vacation and a business trip which was interrupted last month by a stop at the Mayo clinic, Rochester, Minn. Mr. Reith was formerly stationed in the New York offices of the company, but was sent to Bahrein Island about 2 years ago.

GEORGE A. FOSTER, formerly drilling supervisor for Kern Trinidad Oilfields, Ltd., in Trinidad, has returned to the United States with Mrs. Foster and their daughter Sally. Mr. Foster served as an international delegate at the International Petroleum Exposition in Tulsa and expects to make his home in the Mid-Continent area in the future.

R. B. ROPER, in charge of the safety department for Humble Oil & Refining Co., Houston, Tex., has been elected a member of the Houston Safety Association executive committee.

ROBERTO PARDO BECERRA, assistant secretary and treasurer of Pantepec Oil Co. of Venezuela, sailed from New York May 24 en route to Caracas, Venezuela, where the company is domiciled.

DR. E. E. ROSAIRE, president of the Subterrex Co., Houston, Tex., and DR. LEO HORVITZ, of the same company, addressed the Southeast Texas section of the American Chemical Society at Houston last week on "Geochemical Methods of Prospecting for Petroleum."

PAUL WEAVER, chief geophysicist, Gulf Oil Corp., Houston, Tex., addressed the Houston Geological Society last week. Mr. Weaver discussed "Recent Salt Developments in Northern Louisiana, Arkansas and Mississippi."

E. R. SPENCER, assistant chief engineer of the Texas-Empire Pipe Line Co., Tulsa, will receive an honorary degree in engineering from the State College of Washington June 3 in recognition of outstanding work performed in the internal-combustion-engine field during the last 15 years.

L. B. LITTLE, general superintendent of Standard Oil Co. of California production department in the southern California district, was given a birthday barbecue in the shadow of the state's first oil well in Pico Canyon by a group of 75 veterans who have been with the company more than 20 years. ROY GUNN acted as master of ceremonies and introduced WALTON YOUNG, who spent 35 years in the producing department in the Pico Canyon area. OSCAR LAWLER, attorney, on behalf of those present, presented a gift to Mr. Little in celebration of his fifty-ninth birthday. In addition to the producing department members there were also present A. P. JOHNSON, district sales manager in Los Angeles; H. C. HANNA, manager of the El Segundo refinery; J. E. KLEIN, superintendent of the pipeline department for southern California, and representatives of other departments.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

Kansas City Times is bemoaning the fact that Kansas City is permitting other places to profit by the oil traffic of Kansas and Oklahoma.

W. T. Munn, vice president of the Kanotex Refining Co., dies in Independence, Kans.

White & Sinclair, of Tulsa, buy 30,000 acres of Mexican oil land from George Harmon. One well is drilling on the property close to a 130,000-bbl. well of Royal Dutch-Shell. The consideration is said to have been $2,000,000.

20 YEARS AGO

There are 1,157 rigs up and 2,836 wells drilling in the Wichita Falls-Ranger district in North Central Texas. Many of the rigs will never be drilling wells and many of the drilling wells will never be completed, because they were started by fly-by-night promoters preying on the innocent and confiding public.

A mammoth refinery is being built in Swansea, Wales, by the Anglo-Persian Oil Co.

Wholesale price for gasoline in Group 3 market, car lot, spot delivery ranges from 23 to 27 cents per gallon; kerosene, 13 to 13½ cents; casinghead-kerosene blend, 16½ to 17½ cents; raw casinghead, 18 to 18½ cents; gas oil, 9½ to 10 cents.

10 YEARS AGO

The Oklahoma Corporation Commission estimates the potential production of Oklahoma at 1,220,000 bbl. per day. It is producing 680,000 bbl. a day under proration.

Samuel C. Redd, widely known oil operator, is fatally injured in an automobile wreck at Appleton, Wis.

T. L. DONOVAN, formerly associated with the Caracas Petroleum Co., is now an engineer with Texas Co. in Venezuela.

DR. MAYNARD WHITE, of Gulf Oil Corp., will present a paper to the Ardmore Geological Society on "Fusulinids" June 3 at Dornick Hills Club, Ardmore, Okla.

L. V. CASSADAY, of Lomita Gasoline Corp., and W. C. DAYHUFF have been nominated for president and vice president, respectively, for the 1940-41 term of the California Natural Gasoline Association, nomination being tantamount to election.

J. C. HUNTER, independent oil operator of Abilene, Tex., and president of the Mid-Continent Oil and Gas Association, last week returned to that city from Washington, D. C., where he has spent most of the time since Congress assembled last January.

J. HERBERT MOORE, with Humble Oil & Refining Co. and formerly scout in the Gulf Coast district of Texas, has been transferred to Midland, Tex., where he will be scout for the south Permian basin district. He replaces H. L. BECKMANN who was recently promoted to geologist on the company's staff.

W. M. FULTON, dean of Montana oil operators, was not chosen "Grand Old Man of the Oil Industry" at the Tulsa petroleum exposition, but he did not do so badly. He drilled in a 500-bbl. well in the high-gravity pool of Kevin field while the Tulsa judges were awarding the honer to GUY T. BERRY, Independence, Kans.

ARTHUR H. ELLIOTT has been appointed London, England, representative of the Socony-Vacuum Oil Co., Inc., operations.

JOSEPH L. QUINN has been made chief scout and assistant land agent for the Texas producing division of the Pure Oil Co., Fort Worth, Tex.

PRESIDENT D. J. MORAN and 35 officials of Continental Oil Co. have left by bus for their annual inspection of properties. They will travel 8,000 miles through 15 states, returning about June 10.

ED ZIHLMAN, for the past 3 years scout for Texas Co. in the West Texas district with headquarters at Midland, has been transferred to Wichita Falls, Tex., where he will scout the North Texas district.

JAMES HARRINGTON, of General Petroleum's production department at Vernon, Calif., and ED SOULE, of the company's southern California marketing district, have been elected members of the city councils of Montebello and Manhattan Beach, respectively.

GEORGE CALLIHAN, independent operator and drilling contractor of Albany, Tex., last week flew to Havana, Cuba, where he is completing plans to drill a 5,000-ft. test well about 45 miles from Havana. He was accompanied by Mrs. Callihan and they are expected to return this week.

L. L. AUBERT, chairman, and WILLIAM HOBRO, A. H. BELL, V. H. WILHELM, R. I. BROWN, RICHARD FENTON, and WILLIAM KECK, JR., have been elected members of the newly organized allocation committee of the Central Committee of California. Mr. Aubert was reelected chairman in recognition of his work during the past year.

Quit Veneer for Oil

When Harry Allison Logan quit as clerk and bookkeeper of a veneer factory to participate in the organization of the company he manages he kept a pioneer name in oil on the roster of that industry; for his father, Ryland M. Logan, was one of Pennsylvania's early producers.

HARRY A. LOGAN

Mr. Logan was born in Summit City, Pa., in 1881, when oil development of that area was at its height. Four years later the family moved to Warren, Pa., where the boy received his early education. Completing a course in Erie Business College in 1899, he got a job in the veneer works, where he remained till 1902. In that year he was one of a group of men who organized United Refining Co. He served as accountant. He is now vice president, general manager, treasurer, and a director. He also is president of Elk Refining Co., Charleston, W. V.

Mr. Logan is president too of Emblem Oil Co., Warren, and Red Star Lubrication Service, Jamestown, N. Y.; vice president of J. L. Yerdon & Co., Bradford, Pa.; vice president and director of Warren Bank & Trust Co.; vice president and director of the National Petroleum Association, and a director of the American Petroleum Institute.

During the World War Mr. Logan was a member of subcommittees of the National Petroleum War Service Committee. His hobbies are farming, golf, and horseback riding, and he maintains a country home as well as his residence in Warren. He and Miss Helen Temple, of London, England, were married in 1922, and they have two children.

JOHN DOMERCO, petroleum engineer for California Arabian Standard Oil Co., is in the United States on leave.

JOHN B. MILLS, president of the Begel Oil Corp., Dallas, Tex., is the president of a recently organized company in Dallas to be known as the Ce-Beth Oil Co.

JOHN EIDOM, of Hancock Oil Co., and T. W. PETERS, marine superintendent of Standard Oil Co. at Los Angeles Harbor, have been elected directors of the Bilge Club, which held its annual meeting recently at the California Yacht Club.

H. S. COLE, division manager of Texas Co., Fort Worth, Tex., is on a tour of the company's oil properties in the northern countries of South America. The trip is being made by plane and he is expected to return in about 2 weeks.

R. F. NIVEN, who entered employ of Union Oil Co. in 1932, has been appointed assistant secretary. He is president of the Los Angeles Junior Chamber of Commerce Music Foundation, executive committee member of the Southern California Symphony Association, and a committee member of the American Youth Hostels.

Eastern Gulf Oil Co., Ltd., British subsidiary of the Gulf Oil Corp., has been registered in London and the board of directors announced. They are, according to London Petroleum Times: FRANK A. LEOVY, Pittsburgh, Pa., vice chairman of Gulf Oil Corp., president of Venezuela Gulf Oil Co., and chairman of Gulf Oil Exploration (Great Britain); EDGAR C. BOTHWELL, vice president, Venezuela Gulf and director Gulf Oil Exploration (Great Britain); RALPH O. RHOADES, director Kuwait Oil Co.; H. T. GALEY, Gulf Oil Corp., and B. E. C. OGLE, London solicitor.

J. A. LYONS, petroleum engineer for the Texas Railroad Commission, has been appointed district engineer for the upper Gulf Coast district, with headquarters at Houston, Tex. Mr. Lyons succeeds HEATH RENFRO who was transferred to the Corpus Christi district.

O. D. DONNELL, Ohio Oil Co., has been named chairman of the 1940 central committee on standard procedure for measuring, sampling, and testing crude oil, of the American Petroleum Institute's Division of Production, with W. R. TRELFORD, Humble Oil & Refining Co., vice chairman. Members of the committee are D. S. BUSHNELL, Northern Group of Pipe Lines; W. M. HOLLAND, Ohio Oil Co., Casper, Wyo.; NELSON K. MOODY, Sinclair Prairie Oil Marketing Co., Tulsa; and W. L. STEWART, Union Oil Co. of California, Los Angeles. Subcommittee chairmen are: Correlating committee, Mr. Trelford; Group 1 subcommittee on uniform tank measurements and gage tables, RAY F. SHUMAKER, Sinclair Refining Co., Independence, Kans.; Group 2 technical subcommittee on methods of test for crude oil, R. P. ANDERSON, American Petroleum Institute; Group 3 regional subcommittee on pipe lines, E. L. ADAMS, General Petroleum Corp.; Group 4 national subcommittee of oil accountants, A. L. CARLSON, Stanolind Pipe Line Co., Tulsa; and Group 5 subcommittee on marine transportation, Mr. Trelford.

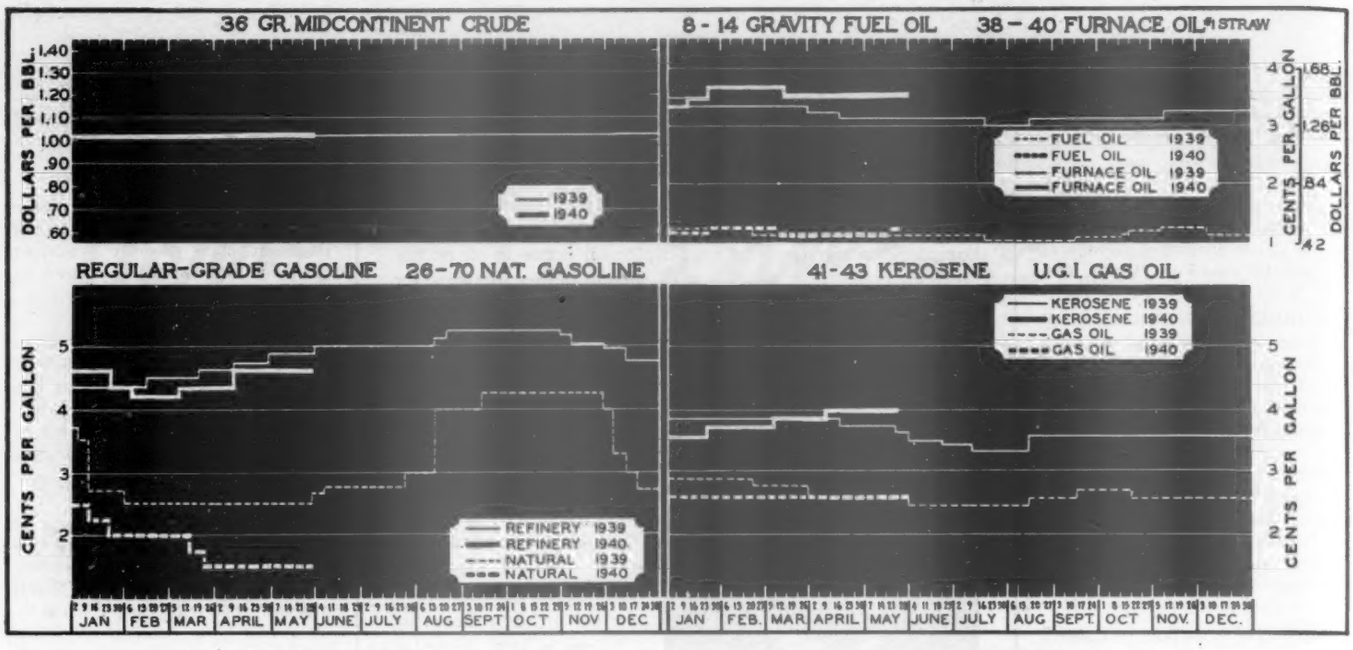
V. C. MALEY, formerly geologist with Humble Oil & Refining Co. in the West Texas district, Midland, has been transferred to Hattiesburg, Miss., where he has assumed charge of the geological offices covering Mississippi, Alabama, and Florida.

H. D. AGGERS, production foreman for Union Oil Co. at Bakersville, Calif., spent the past two weeks attending the International Oil Exposition at Tulsa and the spring meeting of the American Petroleum Institute at Fort Worth, Tex.

PROF. VLADIMIR N. IPATIEFF, director of chemical research of Universal Oil Products Co. and a professor of chemistry at Northwestern University, received the Willard Gibbs Medal at a dinner given by the Chicago section of the American Chemical Society May 24. The medal is awarded annually by the section for outstanding contributions in chemistry. CARY R. WAGNER, chief chemist, Pure Oil Co., presided at the dinner.

H. J. LUTCHER STARK, independent operator of Orange, Tex., accepted an invitation last week to crown the 1940 national tomato queen at a coronation pageant at Jacksonville, Tex., June 3.

Shifts: A. H. PROCTOR, superintendent, Magnolia Petroleum Co., from Stonewall, Okla., to Oklahoma City. E. N. WILSON, superintendent, Magnolia Petroleum Co., from Oklahoma City to Dallas, Tex.; WILLIAM E. KENNETT, geologist, Superior Oil Co., from Coalinga, Calif., to Girard, Calif.; T. TAIRA, Asano Bussan Co., from Los Angeles, Calif., to New York; GEORGE BRUNDRETT, engineer, Fain-McGaha Oil Corp., from Stamford, Tex., to Wichita Falls, Tex.; P. D. BOWLEN, president Tex Canadian Oil Corp., Ltd., from Arp, Tex., to Tyler, Tex.; J. F. WHITLEY, JR., Hurricane Petroleum Corp., from Arp, Tex., to Shreveport, La.; JOHN H. BAXTER, engineer, Red Bush Producing Co., from Ashland, Ky., to Bartlesville, Okla.; MAX LYON, engineer, Carter Oil Co., from St. Joseph, Mo., to La Junta, Colo.; WILLIAM C. FOWNES, Shamrock Oil & Gas Corp., from Pinehurst, N. C., to Oakmont, Pa.; A. C. CALVERT, superintendent, Barnsdall Oil Co., from Skiatook, Okla., to Galena, Kans.



Representative Mid-Continent Quotations on Crude Oil and Refined Products, Basis Oklahoma (Group 3)

Holiday Stirs Gasoline Purchases in Group 3 Area, but Prices Lag

By T. F. SMILEY

ORDERS for gasoline were reaching refiners in the Group 3 area at a slightly accelerated rate this week, indicative of preparations for Memorial Day and for the vacation season it ushers in. The pickup in demand was without significance on the price graph. Quotations scarcely quivered.

The only refiners making any money out of gasoline were those who bought distress stocks at concessions and resold the material. "Perhaps we make enough that way to compensate for what we lose on the gasoline from our own refineries," said one sales manager doubtfully.

No signs of relief from the country's topheavy stocks of motor fuel that have depressed prices this year were visible. On the contrary a new all-time high in the nation's runs to stills pointed to aggravation of an already serious condition. This stepping up in plant operations is in the face of a warning from the Bureau of Mines that "whereas it is usually necessary to intensify operations in the summer to supply the greater motor-fuel demand, that need is not present this year."

Refinery Runs Rise

Mid-Continent refiners, who have preserved a fairly creditable record in the matter of keeping their gasoline output in line with demand, sinned along with the others in helping to establish a new record for refinery runs in the week ended May 18. The total daily increase was 45,000 bbl., and the contribution of Mid-Continent refiners was 4,000 bbl. However, their offense doesn't look so bad in the light of the fact that in the same week Mid-Continent stocks were reduced 182,000 bbl.

One hears increasing talk in favor of a well shutdown such as was put into operation last August with beneficial results in both the crude and the refinery markets. Not a few in the refining division would vote in favor of a 30-day refinery shutdown too, declaring it would remove excessive gasoline inventories without creating a shortage of any essential refinery product.

The 25-cent cut in the price of Pennsylvania crude had no observable repercussions in any of the western interior areas, neither crude prices nor refinery prices showing any effect whatever. The reduction seems to have been of entirely local significance, adopted to afford relief to refiners operating on Pennsylvania Grade crude.

Imparting new elements of uncertainty to the gasoline and other divisions of the market were startling developments in the European war. Although expectations that the conflict eventually would result in substantial demands upon United States refiners had been pretty largely abandoned, the suddenly widened resort to mechanized warfare has started speculation anew. In the meantime the tremendous accumulation of gasoline at the Gulf remains there, waiting for the export demand that never came.

Natural gasoline was unchanged, both in price and in outlook. It continued steady in Oklahoma and demoralized in Texas, with quotations necessarily based on what the product could command in the overstuffed Texas market.

Heating Oils Steady

Heating oils maintained a steady tone, supported by inquiries which refiners now are receiving for June, July, and August delivery. The unprecedented demand for light fuels last season is prompting buyers to begin stocking up before spreading demand sends prices up. There is pretty general agreement that quotations on furnace oils are at their bottom.

Tractor fuels revealed softness, and some grades were off an eighth. Kerosene was fairly steady, exhibiting neither strength nor weakness. Heavy industrial fuel was in more active demand and quotations moved up slightly.

Lubricating oils were steady, and confidence was expressed that current prices would stand unless those in the East took another dive. Wax was reported definitely stronger, though last week's prices continued in force.

Refined Oil Market Barometer

Weakness of gasoline continues, with huge overaccumulation neutralizing most of the benefits of seasonal rise in consumption. California's market is more demoralized than at any other time in past 2 years. Slightly better tone noted on Gulf Coast. Foreign inquiries stirring interest. Light fuels decline in East, but hold fairly well in interior areas. Wax somewhat firmer.

MID-CONTINENT. Gasoline and naturals weak. Heating oils steady. Tractor fuels quiet.

EAST COAST. Fuel oils lower. Gasoline inactive, with tank-wagon prices tending downward.

GULF COAST. Gasoline slightly steadier. Bunker fuel and diesel oils lower.

PENNSYLVANIA. No price changes, but market tone moderately improved by crude-price cut.

CALIFORNIA. Gasoline extremely weak, and retail price cutting has started. Kerosene firm.

CHICAGO. Gasoline quiet. Tractor fuels active. Heavy industrial fuel in better position.

Heating-Oil Maximum Price Is Established for Next Winter

By H. STANLEY NORMAN

NEW YORK, May 28.—Fuel-oil prices turned downward last week in the northeastern section of the country, reflecting the influence of seasonal conditions and the softer cargo market which made its appearance a month ago on the Gulf Coast.

With the softer summer fuel-oil prices, however, came additional evidence that refiners are protecting themselves against next winter's demand. The Standard Oil Co. of New Jersey and its northern marketing subsidiaries established maximum 1940-41 winter heating-oil prices in contracts offered customers last week which range in price a half to a cent per gallon more than in the past burning season.

Most grades of motor fuel were unchanged in this section last week but weather conditions continue a distinct handicap to consumption. Top executives expressed growing concern last week over the fact that the industry has arrived at June 1 with roughly 101,000,000 bbl. of motor fuel on hand. Definite prospects for increased consumption are confined to domestic requirements. The petroleum demand of Europe at war and the source that will be called upon to supply requirements under present conditions of combat can be nothing more than pure speculation. There are so many unknown factors, particularly what Italy will do, that to depend on European demand to absorb surplus motor fuel is just a wishful hope.

Guesses have been made by well-informed individuals that European demand will make a substantial impression on exports from the United States if the war lasts on its present "all out" scale for another month or two. There is already some evidence filtering through the maze of rumors that the Allies are preparing to replenish their reserves, but with markets as open as they are today no one can be certain that the business will accrue to this country. A more detailed report on this particular development is given in another part of this issue dealing specifically with a review of war developments as related to petroleum consumption.

The steady declines in Pennsylvania lubricating-oil prices during the past weeks were reflected by a cut of 25 cents per barrel in the posted crude prices by the Joseph Seep Purchasing Agency. Bright stocks were off another cent per gallon last week. Other types of lube stocks were unchanged from the preceding week, but an increase in the export movement is needed to bolster heavier shipments against domestic contracts to change direction of the market.

Reports circulated that a few cargoes of gasoline and diesel oil had been sold on the Gulf Coast, but the general market there lacks backbone. Inquiries are relatively scarce and offers of most products are plentiful, combining to continue the soft condition.

The fuel-oil price reductions along the entire Atlantic seaboard last week were expected in most quarters. Refiners were thankful that the long delayed summer season enabled the market to maintain its winter level this long, especially in view of the absence of compensating increases in motor-fuel prices.

The British pool was reported to have purchased a cargo of 67-octane gasoline in the Gulf Coast open market, but terms of the sale were not disclosed. Opinion was that the material probably brought around 4⅝ cents per gallon.

About 30,000 bbl. of 43 diesel-index gas oil was sold for loading last Tuesday on the Gulf at 3.8 cents and an interrefinery transaction on a cargo of 48 diesel-index gas oil at 3.5 cents was reported. Gulf Coast refiners are offering cargoes of No. 2 fuel oil at ranges of 3½ to 3¾ cents per gallon, but some suppliers are still asking 4 cents for this grade of burning material.

Cargo lot suppliers of Bunker C fuel oil on the Gulf Coast generally quoted prices ranging from 75 to 85 cents per barrel. The Bunker C price at New York was lowered last week by Standard of New Jersey in its general fuel-oil reduction to $1.35 per barrel, which is 15 cents below the previous price which had held since the European war started, although the market strength was largely based on domestic conditions. The reduction in the Bunker C fuel-oil price at New York, Baltimore, Norfolk and at Charleston, where the quotation was lowered 15 cents to $1.30, were made effective May 24.

On the same date, Standard of New Jersey reduced the price of marine diesel fuel at New York, Baltimore, Norfolk, Charleston and Wilmington 15 to 25 cents per barrel. The reduction at New York and Baltimore brought prices down to $1.95 per barrel, off 25 cents, and at the other three points the cut of 15 cents brought prices to a par with New York and Baltimore.

"Contract buyers of domestic heating oil," said the Standard of New Jersey announcement, "will be protected in price with a maximum of 7¼ cents a gallon up to December 1 in New York City and metropolitan New Jersey. For the 6 months from December 1 to May 31, 1941, the contract maximum will be 7.70 cents in New York City and 7.75 cents in metropolitan New Jersey. The maximums in Westchester and Nassau counties will be two-tenths of a cent higher. For New York City the new maximum for the first 6 months (June 1 to December 1) is ½ cent higher than the 1939-40 maximum and approximately 1 cent higher for the second 6 months. Maximum prices for other points will vary according to distance from the refineries."

At the same time, a reduction, effective May 24, was announced in tank-wagon price of domestic heating oil No. 2, making the price 6¾ cents per gallon in New York City and metropolitan New Jersey. Prices previously were 7.1 cents in New York and 7.4 cents in New Jersey.

Letters from the company to present customers explain that setting of contract top prices has been delayed until now to make sure that "in these days of uncertainty we could offer more adequate and special protection." The difficulty in anticipating conditions affecting products and prices in advance is responsible for the setting of top prices for 6-month intervals for the first time. The letter points out that, due to changing conditions, it may be necessary to withdraw this special price protection feature at any time. Withdrawal, however, will apply only to those who have failed to sign contracts.

The tank-car prices of light fuels were lowered as much as three-quarters of a cent at some points.

Tank-wagon price reductions ranging from a quarter cent per gallon at Providence, R. I., to 1.3 cents at Hartford, Conn., were made last week in the New England and the northern New York territory by Socony-Vacuum Oil Co., Inc. The price was reduced nine-tenths of a cent at Syracuse, bringing the quotation there to 12.5 cents and a half-cent reduction was made at Worcester, Mass., where regular motor fuel is now quoted at 11.6 cents.

A. P. I. Weekly Refinery Statistics

Week Ended May 25, 1940

	Capacity reporting (per cent)	Total gasoline stocks (bbl.)	Residual fuel-oil stocks (bbl.)	Gas oil and distillate stocks (bbl.)	Daily crude runs (bbl.)
East Coast	100.0	23,618,000	8,115,000	7,218,000	573,000
Appalachian	91.0	3,960,000	661,000	365,000	118,000
Ind., Ill., and Ky.	89.5	17,555,000	3,322,000	2,790,000	550,000
Okla., Kans., and Mo.	76.9	7,887,000	1,912,000	1,078,000	287,000
Inland Texas	59.6	1,993,000	1,560,000	288,000	123,000
Texas Gulf	85.3	15,052,000	5,554,000	4,099,000	856,000
Louisiana Gulf	97.6	2,958,000	988,000	858,000	116,000
N. Louisiana and Ark.	51.5	569,000	487,000	234,000	43,000
Rocky Mountains	55.5	1,638,000	605,000	129,000	59,000
California	87.3	18,012,000	78,616,000	9,957,000	485,000
Total reported	85.1	93,242,000	101,820,000	27,016,000	3,210,000
Est. unreported	.....	7,055,000	2,195,000	1,340,000	370,000
*Est. total	.....	100,297,000	104,015,000	28,356,000	3,580,000
*Est. total previous wk.	.....	101,015,000	104,245,000	27,345,000	3,665,000
*May 25, 1939	.....	84,952,000	110,792,000	27,510,000	3,405,000

*Bureau of Mines.

Stocks of Crude Oil in the United States

(BUREAU OF MINES ESTIMATE)

Week ended May 18, 1940	257,647,000 barrels
Week ended May 11, 1940	257,079,000 barrels
Week ended May 20, 1939	277,068,000 barrels

Figures do not include stocks of heavy, unrefinable California crude.

Gulf Coast Markets

HOUSTON, Tex., May 28.—Under pressure of recent reductions in the

(Continued on Page 111)

Retail Oil Markets

Tank-wagon and filling station prices on gasoline and kerosene furnished by the larger marketing firms

Prices as of May 28, 1940

Taxes

The gasoline quotations given in the following tables include the 1-cent federal tax, as well as state, county, and city taxes. The gasoline is the regular or standard grade. In most areas lower grades and a premium grade also are available.

Standard Oil Co. (Indiana)

	Gasoline			Kero.
	Tank wag.	Dlr.	Incl. tax	tank wag.
Chicago, Ill.	15.1	13.1	4.0	10.0
Decatur	13.6	12.1	4.0	9.5
Joliet	15.1	13.6	4.0	10.0
Peoria	15.1	12.7	4.0	10.0
Quincy	14.9	13.4	4.0	9.8
Davenport, Ia.	15.1	13.6	4.0	‡10.0
Des Moines	14.9	12.4	4.0	‡9.8
Mason City	15.3	13.8	4.0	‡10.2
Duluth, Minn.	16.9	15.4	5.0	10.8
Mankato	16.5	15.0	5.0	10.4
Minneapolis	16.5	14.5	5.0	10.4
LaCrosse, Wis.	16.5	15.0	5.0	10.4
Green Bay	16.9	15.4	5.0	10.3
Milwaukee	16.3	14.8	5.0	10.2
Detroit, Mich	13.6	12.1	4.0	7.6
Grand Rapids	13.2	11.2	4.0	9.0
Saginaw	14.2	12.7	4.0	9.3
Evansville, Ind.	16.6	15.1	5.0	†10.5
Indianapolis	16.8	14.3	5.0	†10.2
South Bend	16.8	15.3	5.0	†10.2
Fargo, N. D.	16.2	16.2	5.0	11.6
Huron, S. D.	17.0	15.5	5.0	10.9
Kans. City, Mo.*	14.4	12.9	4.0	8.0
St. Louis*	14.7	12.7	4.0	8.0
St. Joseph	14.4	12.0	4.0	7.9
Wichita, Kans.	13.3	11.6	4.0	7.5

*State tax 2 cents, 1-cent city tax, and 1-cent federal tax. †Does not include 4-cent state tax. ‡Does not include 3-cent state tax.

Exclusive of state general sales taxes.

Discounts to commercial consumers: On purchases per month off tank-wagon prices: 1,000 gal. or more, 1.5 cents off; minimum delivery 25 gal.

Stanolex Fuel Oil in Chicago

Effective April 18, 1940, f.o.b. Chicago, tank-wagon prices: Standard heater oil, 1-99 gal., 8.75 cents; 100-149 gal., 7.75 cents; 150 gal. and over, 7.25 cents. Stanolex fuel oil No. 1, 1-99 gal., 8.5 cents; 100-149 gal., 7.5 cents; 150-399 gal., 7 cents; 400 gal. and over, 6.5 cents. Stanolex furnace oil, 1-99 gal., 8.5 cents; 100-149 gal., 7.5 cents; 150-399 gal., 7 cents; 400 gal. and over, 6.5 cents. Stanolex fuel oil A, 1-399 gal., 5.5 cents; 400-799 gal., 4.5 cents; 800 gal. and over, 4.25 cents. Stanolex fuel oil B, 1-399 gal., 5.5 cents; 400-799 gal., 4.5 cents; 800 gal. and over, 4.25 cents. Stanolex bunker C fuel oil, 1-999 gal., 4.25 cents; 1,000 gal. and over, 3.25 cents.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline			Kero.
	Cons'r tank wag.	Dlr. vided dlr.	Incl. tax	tank wag.
Ohio points	15.5	14.5	5.0	*9.0

*Includes state tax of 1 cent.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline			Kero.
	Cons'r tank car	Dlr. tank wag.	Incl. tax	tank wag.
Atl'tic City, N. J.	11.6	12.7	4.0	8.4
Newark	11.6	12.7	4.0	8.4
Annapolis, Md.	13.55	14.35	5.0	9.5
Baltimore	12.75	13.75	5.0	9.0
Cumberland	14.15	16.15	5.0	10.0
Wash'gton, D. C.	11.00	12.00	3.0	9.5
Danville, Va.	14.95	17.45	6.0	11.5
Norfolk	13.75	16.25	6.0	11.0
Petersburg	14.05	16.55	6.0	11.7
Richmond	14.05	16.55	6.0	11.0
Roanoke	15.25	17.75	6.0	11.0
Charles'n, W. V.	14.55	17.05	6.0	12.6
Parkersburg	13.85	15.35	6.0	11.2
Wheeling	14.85	16.75	6.0	11.8
Charlotte, N. C.	16.90	16.50	7.0	11.8
Hickory	17.45	18.95	7.0	12.3
Mt. Airy	17.30	18.80	7.0	12.2
Raleigh	16.65	16.50	7.0	11.5
Salisbury	16.95	16.00	7.0	11.9
Charleston, S. C.	14.75	17.25	7.0	9.25
Columbia	15.60	18.10	7.0	11.5
Spartanburg	16.30	18.80	7.0	12.2

Price basis to Essolene undivided dealers: Dealer tank-wagon price less 0.5 cent per gallon. Price basis to commercial consumers, effective March 8, 1937, in Maryland, District of Columbia, and in Arlington and Fairfax counties in Virginia; and March 12 in New Jersey: To contract accounts purchasing at least one full compartment at time by hose connection, on yearly purchases: From 2,500 to 100,000 gal., consumer tank-wagon price at time and place of delivery; 100,000 gal. per year, consumer tank-car price plus 0.5 cent per gallon. Consumer tank-wagon price generally will be equivalent to dealer tank-wagon price less 0.5 cent per gallon.

Effective January 16, 1939, in North Carolina the commercial consumer schedule became as follows: Single deliveries of 50 gal. or more, consumer tank-wagon price. Single deliveries of less than 50 gal., 4 cents per gallon over consumer tank-wagon price. Generally the posted consumer tank-wagon price will be equivalent to the dealer price, less 0.5 cent per gallon. The above policy also applies in South Carolina, effective January 23, 1939.

Discounts for kerosene, 1 cent off tank-wagon price for 25 gal. or more under contract (contract not necessary in Baltimore), except no discount in New Jersey.

Southern District

STANDARD OIL CO. (KENTUCKY)

	Gasoline			Kero.
	Cons'r tank truck	Net sta.	Incl. tax	tank wag.
Atlanta, Ga.	17.5	17.5	7.0	11.0
Augusta	17.0	17.0	7.0	10.0
Macon	14.5	14.5	7.0	10.0
Savannah	16.5	16.5	7.0	9.0
Birmingham, Ala.	17.5	17.5	8.0	9.0
Mobile	18.0	18.0	9.0	8.0
Montgomery	19.0	19.0	9.0	9.0
Jackson, Miss.	16.0	16.0	7.0	10.0
Vicksburg	16.0	16.0	7.0	9.5
Jacksonville, Fla.	16.0	16.0	8.0	8.0
Miami	17.0	17.0	8.0	8.0
Pensacola	18.0	18.0	9.0	8.5
*Tampa	21.0	18.0	8.0	8.0
Lexington, Ky.	15.5	15.5	6.0	10.0
Covington	14.5	14.5	6.0	9.5
Louisville	14.5	14.5	6.0	9.0
Paducah	15.5	15.5	6.0	9.0

Price basis to tank-wagon consumers, effective January 4, 1937, 3 cents per gallon below tank-wagon price.

Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon; Birmingham, Ala., has a city gasoline tax of 1 cent per gallon; Pensacola, Fla., has a city gasoline tax of 1 cent. All are included in the table.

*Temporary discounts to tank-wagon consumers in Tampa 3 cents per gallon below consumer tank-wagon price on Crown gasoline.

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline			Kero.
	Cons'r tank car	Dir. tank wag.	Incl. tax	tank wag.
Albany	11.6	13.6	5.0	8.3
*Met. N. Y.: Manhat., Bronx, Queens, Brklyn., Staten Island	11.7	12.8	5.0	8.5
Buffalo	12.6	14.5	5.0	7.9
Rochester	12.8	14.8	5.0	8.5
Syracuse	12.2	12.5	5.0	8.8
Portland, Me.	11.6	13.0	5.0	8.5
Manchester, N.H.	12.3	13.7	5.0	8.9
Burlington, Vt.	12.1	14.4	5.0	8.7
Boston, Mass.	10.5	11.5	4.0	8.5
Worcester	11.1	11.6	4.0	8.0
Hartford, Conn.	10.9	11.5	4.0	8.4
New Haven	10.8	11.8	4.0	7.5
Providence, R. I.	10.5	11.75	4.0	8.5

*Does not include 2 per cent city sales tax, wh'ch is calculated on basis of net retail price exclusive of state and federal taxes. Metropolitan New York prices are undivided dealer prices; others are split dealer.

Effective February 15, 1939, the company changed its commercial consumer policy in New York and in New England points for tank-wagon delivery to the following: Annual purchases 10,000 gal. and under, tank-car price plus 2 cents per gallon; annual purchases 10,000 gal. up to 50,000 gal., tank-car price plus 1.5 cents per gallon; annual purchases 50,000 to 200,000 gal., tank-car price plus 1 cent per gallon; annual purchases 200,000 gal. and over, tank-car price plus ⅛ cent per gallon. Private consumers pay undivided dealer price, plus 2 cents per gallon. Private consumers receiving full compartment deliveries of at least 200 gal. receive a discount of ½ cent per gallon.

Pennsylvania and Delaware

ATLANTIC REFINING CO.

	Gasoline			Kero.
	Cons'r tank car	Dir. tank wag.	Incl. tax	tank wag.
Philadelphia, Pa.	12.0	13.5	5.0	10.5
Pittsburgh	13.0	14.5	5.0	10.5
Allentown	13.0	14.5	5.0	10.5
Erie	13.0	14.5	5.0	10.0
Scranton*	12.5	14.0	5.0	10.5
Altoona	13.0	15.0	5.0	10.5
Dover, Del.		14.0	5.0	10.5
Wilmington		13.5	5.0	10.0

Price basis to undivided dealers, dealer tank-wagon price less 0.5 cent per gallon.

Discount on kerosene, 2 cents per gallon off tank-wagon price on tank-wagon deliveries of 25 gal. or more at one time.

*Voluntary discount of 1 cent allowed to dealers only.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline			Kero.
	Tank truck	Serv. sta.	Incl. tax	tank wag.
San Francisco	17.5	18.5	4.0	11.5
Los Angeles	17.0	18.0	4.0	10.0
Fresno, Calif.	18.5	19.5	4.0	12.5
Phoenix, Ariz.	20.0	21.0	6.0	*17.5
Reno, Nev.	20.5	21.5	5.0	13.5
Portland, Ore	20.0	21.0	6.0	13.5
Seattle, Wash.	20.0	21.0	6.0	13.50
Spokane	21.5	22.5	6.0	16.50
Tacoma	20.0	21.0	6.0	13.50

*Includes 5-cent state tax.

Discounts to dealers: On gasoline, off tank-wagon price, to 100 per cent dealers, 3 cents. To commercial consumers: On tank-wagon price; on single deliveries of 40 gal. and over, advance quantity discount extended at time of delivery, 3 cents. Service-station schedule applies on single deliveries less than 40 gal. On kerosene in tank-car, transport-truck, and trailer delivery, 3 cents off tank-wagon price; plant deliveries to jobbers, 2.5 cents below tank wagon.

March 18, 1939, split dealer discount was canceled.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline			Kero.
	Tank wag.	Dlr.	Incl. tax	tank wag.
Denver, Colo.	13.0	...	5.0	10.5
Grand Junction	17.5	...	5.0	12.5
Pueblo	13.0	...	5.0	9.0
Casper, Wyo.	16.5	...	5.0	11.5
Cheyenne	14.0	...	5.0	11.0
Billings, Mont.	18.0	...	6.0	12.0
Butte	16.0	...	6.0	13.0
Great Falls	18.0	...	6.0	12.0
Helena	16.0	...	6.0	12.5
Salt Lake, Utah	15.5	15.5	5.0	14.0
Boise, Idaho	21.1	21.1	6.0	16.0
Twin Falls	21.1	21.1	6.0	16.5
Albu'que, N. M.	13.5	...	6.5	10.0
Roswell	16.0	16.0	6.5	8.0
Santa Fe	17.5	17.5	6.5	10.0

*Includes city tax of 0.5 cent. †Includes state tax of 1 mill.

Tank wagon represents price to consumers. Dealer represents price to dealers. If no dealer price is quoted, the tank-wagon price applies to all classes of trade.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline			Kero.
	Cons'r tank car	Dlr. tank wag.	Incl. tax	tank wag.
New Orleans, La.	14.75	16.25	8.0	†12.0
Baton Rouge	14.75	17.25	8.0	‡10.5
Alexandria	14.75	17.25	8.0	‡10.5
Lafayette	15.00	17.50	8.0	‡10.0
Lake Charles	14.75	17.25	8.0	‡10.0
Shreveport	13.50	16.00	8.0	‡9.0
Knoxville, Tenn.	18.00	19.50	8.0	12.5
Memphis	16.00	17.50	8.0	11.0
Chattanooga	17.50	19.00	8.0	12.0
Nashville	17.00	17.50	8.0	11.5
Bristol	18.25	17.75	8.0	12.0

Essolene at dealer price less 0.5 cent per gallon to undivided dealers.

†Includes 1-cent parish tax and 1-cent state tax. ‡Includes 1-cent state tax.

Price basis to commercial consumers: Effective May 15, 1937, deliveries of 50 gal. or more in one territory take posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gal. at one time pay posted consumer tank-wagon price plus 4 cents per gallon. Generally, the posted consumer tank-wagon price will be equivalent to the dealer price less 0.5 cent per gallon. Kerosene prices include 1-cent state tax.

Effective February 24, 1939, the company reestablished in New Orleans the commercial consumer policy on motor fuel effective in the rest of the state.

Effective December 12, 1938, the company revised its commercial consumer policy on motor fuel in New Orleans, as follows: Single deliveries of less than 50 gal., consumer tank car plus 2 cents per gallon 50 to 199 gal., consumer tank car plus 1 cent per gallon; 200 gal. and over, consumer tank car plus 0.5 cent per gallon.

Oklahoma and Arkansas

CONTINENTAL OIL CO.

	Gasoline		Kero.
	Tank wag.	Incl. tax	tank wag.
Texarkana, Ark	13.0	5.0	7.0
Fort Smith	14.5	5.0	7.5
Little Rock	16.75	7.5	8.0
Muskogee, Okla.	12.0	5.0	7.0
Oklahoma City	10.0	5.0	6.5
Tulsa	11.0	5.0	6.0

Tank wagon represents price to consumers. If no dealer price is quoted, the tank-wagon price applies to all classes of trade.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline			Kero.
	Tank wag.	Dlr.	Incl. tax	tank wag.
Omaha	16.5	12.5	6.0	9.0
McCook	16.5	13.9	6.0	9.0
Norfolk	16.5	14.4	6.0	9.5
North Platte	17.8	14.0	6.0	10.0
Scottsbluff	18.5	15.5	6.0	10.0

Discounts to commercial consumers for tank-wagon deliveries covered only by standard commercial consumers contract, effective January 1, 1935.

Texas

	Gasoline			Kero.
	Tank wag.	Dlr.	Incl. tax	tank wag.
Dallas, Tex.	11.0	15.0	5.0	7.0
Fort Worth	11.0	15.0	5.0	7.0
Houston	13.5	17.5	5.0	8.0
San Antonio	12.0	16.5	5.0	8.0

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank wagon*
Oleum spirits	16.2
V.M.&P. naphtha	16.5
Cleaners' naphtha	15.5
Stanisol	15.5

*Prices include 3-cent Illinois tax but not 1-cent federal tax nor 2 per cent retail occupational tax.

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 150-gal. lots if covered by contract.

Canada*

3-Star Imperial Gasoline
IMPERIAL OIL, LTD.

	Tank wag.	Incl. tax	Kero. tank wag.
Halifax, N. S.	25.0	10.0	19.0
St. John, N. B.	25.0	10.0	19.0
Montreal, Que.	24.0	8.0	16.5
Toronto, Ont.	23.5	8.0	16.0
Hamilton, Ont.	23.5	8.0	16.0
Winnipeg, Man.	26.5	7.0	20.5
Brandon, Man.	28.0	7.0	22.0
Regina, Sask.	25.0	7.0	20.0
Saskatoon, Sask.	28.0	7.0	23.0
Edmonton, Alta.	25.9	7.0	20.0
Calgary, Alta.	23.0	7.0	18.0
Vancouver, B. C.	23.0	7.0	23.0

Tank-Wagon Changes

Standard Oil Co. of Louisiana May 10 reduced dealer tank-wagon gasoline 1 cent in Nashville; May 15, advanced consumer tank-car gasoline 1 cent in New Orleans.

Standard Oil Co. (Kentucky) May 9 reduced consumer tank-wagon and net dealer gasoline 1 cent, and May 20 reduced both another 1 cent in Macon; May 4, reduced consumer tank-wagon and net dealer gasoline 1 cent in Jacksonville; May 7, reduced net dealer gasoline 2 cents and advanced consumer tank-wagon gasoline 4 cents in Tampa.

Socony-Vacuum Oil Co., Inc., May 2 reduced dealer tank-wagon gasoline 0.6 cent in Syracuse, 0.5 cent in Portland, and 0.8 cent in Manchester; May 3, reduced dealer tank-wagon gasoline 0.5 cent in Providence; May 22, reduced dealer tank-wagon gasoline 0.5 cent in Worcester, and 0.25 cent in Providence; May 23, reduced dealer tank-wagon gasoline 0.9 cent in Syracuse and 1.3 cents in Hartford.

Prices of Refined Products

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of May 28, 1940

The quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents a gallon on lubricating oils. Octane ratings in Middle West, Mid-Continent, and Southwest are based on A.S.T.M. method of testing.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:		
72-74 octane (regular)	.04⅝	.04¾
63-66 octane	.04⅛	.04¼
60 octane and below	.03¾	.03⅞
60-62 400 grades:		
72-74 octane (regular)	.04⅝	.04¾
63-66 octane	.04⅛	.04¼
60 octane and below	.03¾	.03⅞

NORTH TEXAS—

U. S. Motor grades:		
72-74 octane (regular)	.04⅝	.04¾
63-66 octane	.04⅛	.04¼
60 octane and below	.03¾	.03⅞
60-62 400	.04¾	.03⅞

NORTH LOUISIANA (Ark. and N. La. delivery)—

U. S. Motor grades:		
72-74 octane (regular)	.05⅛	.05⅜
63-66 octane	.04⅝	.04⅞
60 octane and below	.04¼	.04½

ARKANSAS (Ark. and N. La. del.)—

U. S. Motor grades:		
72-74 octane (regular)		.04¾
60 octane and below		.04

CHICAGO (Based on Group 3)—

U. S. Motor grades:		
72-74 octane (regular)	.04¾	.04⅞
63-66 octane	.04⅝	.04½
60 octane and below	.04	.04⅛
60-62 400 grades:		
72-74 octane (regular)	.04¾	.04⅞
63-66 octane	.04⅝	.04½
60 octane and below	.04	.04⅛

PENNSYLVANIA (inland refineries)—

74-76 octane (regular)		.06
72-74 octane		.05¾
58-62 U. S. Motor	.04½	.05

CALIFORNIA (domestic movement)—

58-60 400, 65 oct. and higher	.07	.08
54-58 U. S. Motor	.05¾	.07

EAST COAST (domestic)—

U. S. Motor, 65 and above:		
*New York (Bayonne)	.06	.06¼
Philadelphia	.06	.06¼
Boston	.06¼	.06½
Baltimore	.06	.06¼
Charleston, S. C.	.06½	.07

*All grades of gasoline ⅛ to ¼ cent less for barge shipments. New York harbor prices are for New York and New England delivery. Prices for New Jersey delivery ¼ cent lower.

GULF COAST (domestic)—

U. S. Motor grades:		
72-74 octane	.04½	.04¾
70-72 octane (leaded)	.04⅜	.04½
68-70 octane	.04¼	.04⅜
65-67 octane		.04¼

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70		.01½
Grade 18-55	.01¾	.01⅞

NORTH TEXAS—

Grade 26-70		.01¼
Grade 18-55		.01½

CALIFORNIA—

75-85 375-390	.05¾	.06

NORTH LOUISIANA (Ark. and N. La. delivery)—

Grade 26-70		.01⅝

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr., 315-325 i.b.p., 110-flash, 540-550 e.p.	.03¾	.03⅞
41-43 gr., 300-320 i.b.p., 110-125 flash, 500-520 e.p.	.03⅞	.04
46-48 gr., 210-230 i.b.p., 480-max., e.p.		.04

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

41-43		.04
42-44		.04⅛

NORTH TEXAS—

41-43		.04

NORTH LOUISIANA (Ark. and N. La. delivery)—

41-43	.04	.04¼

ARKANSAS (Ark. and N. La. del.)—

41-43		.04¼

PENNSYLVANIA (inland refineries)—

45	.05	.05⅛
46	.05⅛	.05¼
47	.05¼	.05⅝

CHICAGO (Based on Group 3)—

41-43	.04	.04⅛
42-44	.04⅛	.04¼

CALIFORNIA (Pac. Coast market)—

38 43 high burning test	.04½	.05¾

NEW YORK (Bayonne, N. J.)—

41-43	.059	.06

GULF COAST (domestic)*—

41-43		.04½

*Barge price ⅛ cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

Range oil		.03⅞
No. 1 prime white, 38-42	.03⅝	.03¾
No. 1 straw, 38-40	.03½	.03⅝
No. 2 straw, 32-36	.03⅜	.03½
No. 3 zero to 10, 28-32		.03⅛

NORTH TEXAS—

No. 1 prime white, 38-42	.03⅝	.03¾
No. 1 straw, 38-40	.03½	.03⅝

NORTH LOUISIANA (Ark. and N. La. delivery)—

No. 2, 32-36	.03	.03⅛

ARKANSAS (Ark. and N. La. del.)—

No. 2, 32-36	.03¼	.03½

CHICAGO (Based on Group 3)—

Range oil	.03¾	.03⅞
No. 1 prime white, 38-40	.03⅝	.03⅞
No. 2 straw, 32-36	.03⅜	.03½
No. 3, zero to 15, 28-32	.03¼	.03⅜

NEW YORK (Bayonne, N. J.)—

*No. 1	.059	.060
*No. 2	.052	.055
*No. 4	.052	.055

*Barge deliveries ⅛ to ¼ cent under above tank-car price.

Gas Oil and Fuel Oil

(Gas oil per gal., fuel oil per bbl.)

OKLAHOMA (Group 3)—

U.G.I. gas oil, under 35	.02⅝	.02¾
No. 5, low pour point, 18-22	.72½	.77½
No. 6, 15 and above, 8-14	.47½	.52½

NORTH TEXAS—

U.G.I. gas oil, under 35	.02⅝	.02¾
No. 5, low pour point, 18-22	.72½	.77½
No. 6, 15 and above, 8-14	.47½	.52½

NORTH LOUISIANA (Ark. and N. La. delivery)—

10-14 fuel oil, industrial	.65	.70

CHICAGO (Based on Group 3)—

U.G.I. gas oil	.02⅝	.02⅞
No. 5, low pour point, 18-22	.75	.80
No. 5, 15 and above, 18-22	.69	.70
No. 6, low pour point, 10-16	.60	.70
No. 6, 15 and above, 10-16	.45	.55

PENNSYLVANIA (inland refineries)—

36-40	.03⅞	.04¼

CALIFORNIA—

30-40 gas oil, per bbl.	1.15	1.25
24 plus diesel, per bbl.	1.15	1.25
24 plus diesel (bunkers)	1.20	1.35
12-16 (bunkers at tidewater)	.65	.75
10-16 (cargo lots)	.65	.75
12-17 (tank cars)	.60	.75
10-17 (high sulfur)	.50	.65
San Joaquin Valley:		
10-18 (tank cars)	.50	.70
24 plus diesel, per bbl.	1.15	1.25
San Francisco:		
24 plus diesel, per bbl.	1.35	1.40
24 plus diesel (bunkers)	1.40	1.50
10-16 (bunkers)	.80	.85

GULF COAST—

No. 2 fuel	.03½	.03¾
43-47 diesel	.03⅞	.04
48-52 diesel		.04
53-57 diesel	.04	.04¼
58-and-above diesel	.04¼	.04½
Bunker C (bulk cargoes)	.72	.80
Bunker C (bunkers)	.80	.90

NEW YORK (Bayonne, N. J.)—

27 plus, gas oil	.05	.052
28-30 diesel (lighterage 6¼c per bbl.)		1.95
28-30 diesel (tank cars)	.04⅝	.05
Bunker C (to ocean-going ships in N. Y. Harbor)		1.35
Industrial fuel (tank cars)	.033	.035

Lighterage charge 5c bbl. additional.

Bright and Steam Refined

OKLAHOMA (Group 3)—

200-210 D, 10-25	.22
150-160 D, 0-10	.18
150-160 D, 10-25	.17½
100-110 D, 0-10	.17
100-110 D, 10-25	.16½
Steam refined:	
600 dark green (untreated)	.07½

PENNSYLVANIA—

Bright Stocks (Pennsylvania Grade No. 8 color, 140-150 at 210, 545-550 flash):	
10 pour point	.21½
15 pour point	.20½
25 pour point	.19
Steam refined:	
600	.11½
650	.14
600 flash	.15½
630 flash	.17

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

0-10 pour point:	
150-3	.10½
180-3	.11½
200-3	.12
250-3	.13
280-3	.13½
280-4	.13
300-3½	.14
350-3½	.14½
400-3½	.15
500-3½	.16
600-3½	.17
100-2½ paraffin oil, 10-25	.06¼
10-25 pour point:	
200-3	.11½
250-3	.12½
280-3	.13
280-4	.12½

GULF COAST—

Pale oils:		
100-3	.05½	.05¾
200-3	.07¼	.07½
300-3	.07¾	.08
500-3½	.08½	.09
750-3½	.09	.09½
1,200-3½	.09¾	.10
2,000-4	.10	.10¼
3,000-4	.12¼	.12½
Red oils:		
200-5-6	.07	.07¼
300-5-6	.07½	.07¾
500-5-6	.08¼	.08¾
750	.08¾	.09¼
1,200-5-6	.09¾	.09¾

CALIFORNIA (Moving to dom. market)—

Pale oils:		
100-2½-3	.07¼	.08
200-2½-3	.07¼	.08
300-2½-3	.07¼	.08
400-3-4	.07¼	.08
450-3-4	.07¼	.08
550-3-4	.09	.11
600-3-4	.09	.11
Red oils:		
200-4-5	.07¼	.08
300-5-6	.07¼	.08
350-5-6	.09¼	.11½
400-5-6	.09¼	.11½
450-5-6	.09¼	.11½
500-5-6	.09¼	.11½
600-5-6½	.09¼	.11½
700-6½ plus	.09¼	.11½
750-6½ plus	.09¼	.11½
900-6½ plus	.09¼	.11½

PENNSYLVANIA—

150 vis. at 70° F., 3 color, 400-405 flash:		
Zero pour point		.23
10 pour point		.22
15 pour point		.21
25 pour point	.19½	.20
200 vis. at 70° F., 3 color:		
Zero pour point		.25½
10 pour point		.24½
15 pour point		.23½
25 pour point	.21½	.22

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (A.m.p.) w.c. scale	.04¾	.05

PENNSYLVANIA (inland refineries)—

122-124 (A.m.p.) w.c. scale		.04⅝
124-126 (A.m.p.) w.c. scale		.04¾

NEW YORK—

Wax in bags fully refined:		
125-127 (A.m.p.) wax		.0630
128-130 (A.m.p.) wax		.0640
130-132 (A.m.p.) wax		.0660
133-135 (A.m.p.) wax		.0675
135-137 (A.m.p.) wax		.0800
Crude scale:		
124-126 (A.m.p.) w.s.		.04¾
124-126 (A.m.p.) y.s.	.04⅜	.04⅛
Petrolatum in barrels, carload lots:		
Dark green	.02625	.03125
Amber	.02875	.03375
Extra amber	.03000	.03625
Lily white	.05125	.05875
Snow white	.06125	.06875
Cream	.04125	.04875

Export Prices

GASOLINE

GULF COAST—

U. S. Motor	.04¼	.04½
60-62 400	.04½	.05
61-63 390	.04¼	.05¼
64-66 375	.04¼	.04⅝

LOS ANGELES—

U. S. Motor grades:		
Above 69 octane	.06¼	.06½
65-69 octane	.05⅝	.06¼
β0-65 octane	.05¼	.05⅝

KEROSENE

GULF COAST—

41-43 water white	.04½	.04⅝

LOS ANGELES—

41-43 water white	.05	.05¼

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.a.s. in bbl.)—

Cylinder stocks:		
600 S.R. unfiltered	.19	.20½
630 S.R. unfiltered	.20	.22½
600 flash, S.R.	.21	.23½
630 flash, S.R.	.26	.26½
Bright stock:		
Light, 25 pour point		.29

NEUTRAL OIL

200-3 color	.31
150-3 color	.29

PARAFFIN WAX

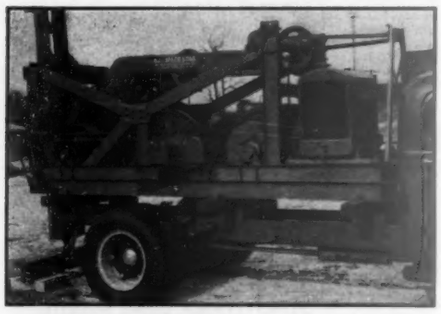
NEW YORK (prices per pound)—

123-125 A.m.p.		.06⅝
125-127 A.m.p.		.06¾
128-130 A.m.p.		.07
133-135 A.m.p.		.07¾
135-137 A.m.p.		.08¼
Crude scale:		
124-126 w.s.	.04½	.04⅝
124-126 y.s.	.04½	.04⅞

EQUIPMENT PROGRESS...

New Speed Star Drilling Machine Can Be Put Into Action Quickly

The new No. 82 Speed Star drilling machine manufactured by the Star Drilling Machine Co., Akron, Ohio, offers features of interest to drilling contractors. Com-



pact and of all-steel construction, this fully portable drilling machine has an electric-welded main frame only 13 ft. long, with main sills 12 in. deep. It is designed for mounting on trucks with standard chassis. As the name indicates, the Speed Star can be placed on location and put into action quickly. The mast is raised by power, and the upper section of the mast latches automatically. Guy lines are furnished already connected to top and lower sections. With stakes and stake eyes regularly furnished, anchoring the mast and rigging up is a matter of minutes only. The sturdily built mast telescopes, can be used at either 40 or 50-ft. height and is built for a safe working load of 15,000 lb.

Air-cooling of bull-reel and sand-reel brakes is another feature. The weight of the brake lever alone is usually enough to keep the reel from slipping when spudding. The double-crank spudder has a built-in shock absorber, with recoil control, and is adjustable to various weights of tools.

All controls on the No. 82 Speed Star are placed within easy reach of the operator. The three reels (bull, sand, and calf) have instantaneous reverse. The machine is powered by Hercules six-cylinder gasoline engine Model QXB, 3¼ by 4⅛-in., assuring abundant speed, power, and flexibility.

TRADE LITERATURE

CLIMAX MOLYBDENUM CO., 500 Fifth Avenue, New York.—Current issue the Moly Matrix, featuring articles on housings for catline hoists and molybdenum cast iron for high-pressure pipe-line valves.

BALDWIN SOUTHWARK DIVISION OF THE BALDWIN LOCOMOTIVE WORKS, Philadelphia, Pa.—May issue of Baldwin Southwark.

CHICAGO PNEUMATIC TOOL CO., 6 East Forty-fourth Street, New York.—Bulletin 768, CP diesels for continuous heavy-duty stationary service.

ARMSTRONG MACHINE WORKS, 868 Maple Street, Three Rivers, Mich.—Bulletin on new ways to cut refrigeration costs.

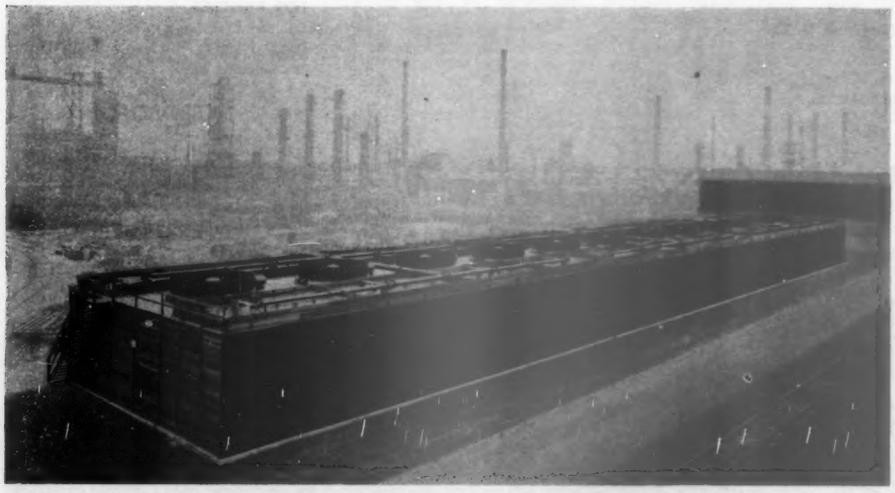
THE STEEL IMPROVEMENT & FORGE CO., Cleveland, Ohio.—"Boiler and Tank Accessories," a catalog of accessories for fired and unfired pressure vessels.

THE PITTSBURGH BRASS MANUFACTURING CO., 3228 Penn Avenue, Pittsburgh, Pa.—Catalog 3, cocks, hose couplings, elbows, fittings, swing joints, plugs, swing unions, etc.

ADOLPH I. BUEHLER, 228 North La Salle Street, Chicago.—The Metal Analyst, a 98-page review of selected appartus for metallurgical testing, including large list of technical publications.

MARLEY COOLING TOWER BUILT FOR HEAVY-DUTY SERVICE

After 2 years of testing and proving, the Marley Co., Kansas City, Kans., announces a new type of cooling tower of patented design especially developed



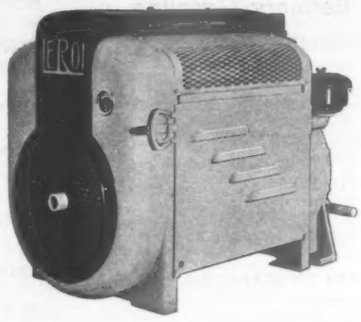
for heavy-duty large-capacity service. The high efficiency claimed is credited chiefly to the tower's unique design. Recirculation of hot saturated used air is not possible. Mixture of water with moving air is uniformly complete throughout the interior area. Air flow is without turbulance since it is horizontal from both sides to the center chamber, whence the top fans expel it.

Operating savings are attributed mainly to reduction in pumping costs due to exceptionally low height and a distribution system which requires no pressure.

Other advantages are freedom from "icing-up" in winter; a water-distribution system that is entirely external, simplifying inspection and maintenance; better use of ground areas on crowded plant sites, and Marley's typical all-bolted, diagonally braced, extra-rugged construction. A 24-page bulletin is devoted entirely to the "Double-Flow" tower, as the new type has been named.

Le Roi Adds Heavy-Duty Air-Cooled Oil-Field Pumping Engine to Line

Le Roi Co., Milwaukee, Wis., announced as an addition to its line of oil-field engines a heavy-duty air-cooled pumping engine developing 7-13 hp. This four-



cylinder valve-in-head engine is equipped with a heavy-duty oil-field type twin-disc clutch and an extra-heavy flywheel to maintain constant speed under the varying load of oil-field pumping.

The crankshaft runs in three precision-type bearings. The valves seat on chrome-molybdenum inserts, which seldom require grinding. The cylinders and crankcases are an integral casting, which makes the engine unusually rigid.

The cylinder bore is 2¾ in. and the stroke only 3 in., which permits a wide speed range without excessive piston speeds at the upper end of the range.

The engine is furnished with a force-feed lubrication system, assuring adequate oil for all bearing surfaces. Large oil capacity, coupled with the finned sump, maintains the oil at a low temperature, keeping consumption and maintenance costs at a minimum.

Crane Gasket Marker Eliminates Need of Compass or Dividers

Crane Packing Co., 1800 Cuyler Avenue, Chicago, has improved its John Crane gasket marker, which is now about 4 in. longer than previously. It is made of rust-proof spring brass, designed as a handy tool for marking and outlining gasket sizes on sheet packing. This new marker eliminates the need of a compass or dividers. It is unnecessary to refer to gasket tables or to take more than one measurement. All necessary information for marking gaskets sizes is etched in raised lettering on the device.

It offers a quick and convenient method for marking gaskets for extra-heavy, medium, standard, and low-pressure flanges, both ring and full-face types up to and including the 10-in. i.d. size. Other advantages claimed are that it saves time and waste of gasket materials. The device is easy to use and gasket dimensions can be marked more quickly.

Axelson Touches Business Peak

Because of the marked increase in the operating capacities of most oil-well tool and supply plants, demands for Axelson heavy-duty engine lathes are reported to be greater than at any time in the past 25 years. According to J. C. Axelson, president, the lathe backlog is nearly $500,000 and growing steadily. Shipments this year will exceed any in the history of the company. Axelson's production of 24-speed heavy-duty engine lathes includes six sizes from 14 to 30 in. in standard lengths. A program of plant expansion is being completed.

AMONG EQUIPMENT MEN...

REPRESENTED SPANG CHALFANT AT PETROLEUM EXPOSITION

These are the men who represented Spang Chalfant, Inc., Pittsburgh, Pa., at the International Petroleum Exposition: David N. Neely, field representative, Houston, Tex.; S. A. Kilmer, chief inspector seamless mill, Ambridge, Pa.; O. A. Bergmann, manager of sales, Tulsa; A. S. Weaver, manager of sales, Houston; J. A. Kennedy, field representative, Tulsa; C. C. Brush, field representative, Houston; H. G. Texter, sales engineer, Tulsa; R. M. Sylvis, advertising manager; W. M. Frame, director of research, Ambridge; G. E. Clifford, vice president in charge of sales, Pittsburgh. The picture was taken in front of the company's booth.

New Sales Company Is Organized

K. T. Anderson and R. B. Hammond have formed the Anderson & Hammond Sales Co., 211 North Oak Street, Centralia, Ill., to service the Illinois basin with drilling and pumping derricks, gear-driven pumping units, pumping equipment, and power units. Companies represented are Muskogee Iron Works, W. C. Norris Manufacturing Co., Baird Manufacturing Co., and Cosco Manufacturing Co.

Koepke Appointed Sales Engineer

Clark Brothers Co., Inc., Olean, N. Y., has appointed Boyd F. Koepke sales engineer, with headquarters at the company's branch office in Tulsa. He will serve the company throughout the Mid-Continent area.

Mr. Koepke received a bachelor of science degree in 1921 at the University of Oklahoma, where he specialized in petroleum engineering and chemistry. He spent several years in refinery research work with the Barnsdall Refining Corp. in Barnsdall, Okla., then went with the Pittsburgh Testing Laboratory, Pittsburgh, Pa., taking charge of its petroleum section. In 1926 he took a sales engineering position with the Leeds & Northrup Co., Philadelphia, Pa. His last position before joining the Clark organization was with the refinery division of the Frick-Reid Supply Corp. in Houston, Tex., as refinery sales engineer.

Santry Advanced to President

At the annual organization meeting of Combustion Engineering Co., Inc., 200 Madison Avenue, New York, manufacturer of steam-generating, fuel-burning and related equipment, Joseph V. Santry was elected president to succeed Frederic A. Schaff, who was elected vice chairman of the board. George L. Bourne was reelected chairman. Mr. Bourne is also chairman of the company's parent organization, the Superheater Co., of which Mr. Schaff is president. Robert M. Gates, vice president in charge of sales since 1933, resigned to accept the presidency of the Air Preheater Corp., New York, an affiliated company. Martens H. Isenberg, vice president in charge of production, was elected executive vice president to succeed Mr. Santry. Albert C. Weigel, formerly assistant to the president, was elected a vice president, and the following were reelected vice presidents: Harold H. Berry, John Van Brunt, F. H. Rosencrants, Charles H. True and John S. Skelly. Other officers reelected are Harold H. Berry, treasurer, and George D. Ellis, secretary and controller. I. B. Swigart was reappointed assistant secretary and assistant treasurer, and Thomas F. Morris assistant secretary. Frank R. Fitzpatrick was appointed assistant to the vice chairman.

BUSINESS NOTES

Phil L. Capy, Dallas, has been made district engineer in Texas for the Despatch Oven Co., Minneapolis, Minn.

Thomas C. Wilson, Inc., manufacturer of tube and pipe-cleaning equipment, is occupying new office and manufacturing quarters at 47-28 Thirty-seventh Street, Long Island City, N. Y., which provide twice as much room as the old plant at 55 Vandam Street, New York.

Edmund Burke, Jr., who was in attendance at the Reed Roller Bit Co. booth during the exposition in Tulsa, was formerly in the oil and gas business in Kentucky.

The Timken Roller Bearing Co., Canton, Ohio, has appointed William Taggart manager of tube sales. Mr. Taggart has been in the steel and tube division since June 1928. Before that he was employed by Republic Steel Corp.

Cookston Sales Manager of Ralco

Harry B. Cookston, who has been selling oil-country equipment since 1916, has been appointed sales manager of Ralco Sales Co., a division of Ralco Manufacturing Co., formerly Rig-A-Lite, Houston, Tex. Mr. Cookston resigned from the sales staff of W-K-M Co., Inc., to make his new connection after 5 years in Gulf Coast and Mid-Continent fields for W-K-M. Ralco Sales Co. is the selling organization not only for specialty products manufactured by Ralco Manufacturing Co., but has the exclusive distribution of other specialties which have been proved successful in the drilling and producing branches of the industry.

Represents Pacific Pump Works

According to an announcement by George E. Bigelow, president and general manager of Pacific Pump Works of Los Angeles, Calif., the Mid-Continent Pump Supply Co., of Tulsa, has taken over the distribution, sales, and service in the Mid-Continent area of Pacific centrifugal pumps for refinery, pipe-line, industrial, and hot-oil service, and Pacific deep-well centrifugal turbines for water wells. Operations in the area will be under the direction of Roy A. Dunbar, president of Mid-Continent Pump Supply Co., which for years has represented Pacific deep-well oil pumps in Mid-Continent fields.

NOMADS' BOARD OF REGENTS HOLDS MEETING AT OIL SHOW

E. L. Decker, of Martin-Decker Corp., and W. F. Bettis, M. O. Johnston Oil Field Service Corp., both of Los Angeles, Calif., were elected chairman and secretary, respectively, of the board of regents of the Nomads at a meeting held in Tulsa during the International Petroleum Exposition. The meeting was the first held by the board, representing the four chapters of the organization in Los Angeles, Houston, Tex., New York, and Tulsa. The regents approved a new constitution and bylaws, which will be submitted to the chapters.

The Nomads, whose active membership is confined to representatives of manufacturers and of supply and service organizations who have been outside the United States in the interest of their companies, were in charge of the entertainment and registration of foreign delegates to the exposition.

The picture, taken at the exposition meeting, shows: Seated, Mr. Bettis, Mr. Decker, and Fred E. Cooper, of Fred E. Cooper Co., Tulsa. Standing, Rex Hamaker, Reed Roller Bit Co.; John H. Baird, exporter, New York; C. O. Wilson, The Oil and Gas Journal, Tulsa; and R. L. Dudley, Gulf Publishing Co.

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Leases and Drilling Blocks

LEASES—East Texas, La., South Ark. 20 acres up, dollar acre up.—Owners—Address Attorney, Box 1122, Little Rock, Ark.

BROKERS and SALESMEN
A complete SERVICE. EXPERTS in every department of the Oil Business at your SERVICE; a REAL SET-UP. The best opportunity ever offered you. Leases in large or small lots at
WHOLESALE PRICES
Write today and get started right.
OIL BROKERS EXCHANGE
Santa Fe, New Mexico.

CRANE-WARD County 20 ac. cheap in fee, under Magnolia lease. J. G. SMITH, 215 Littlefield Bldg., Austin, Texas.

NEW MEXICO
Oil and Gas Leases and Royalties.
ROY G. BARTON, Hobbs, N. M.

FOR complete and accurate coverage of the new Artesia Area, read The ARTESIA (New Mexico) ENTERPRISE. $2 a year.

OIL loans, $50,000 to $1,000,000, up, on production, producing royalties, oil payments, drilling programs. 5 years repayment; low interest; prompt closing; offerings invited: confidential. L. A. (Pat) Casey, Houston, San Antonio, Ft. Worth.

CRANE CO., oil possibilities, cheap fee land, 3 mi. E Ward Gulf-Western drilling. J. G. Smith, 215 Littlefield Building, Austin, Texas.

WE OWN FOUR 30-YEAR OIL LEASES IN CUBA
A—864 hectares on Gulf riparian rights 16 miles from Havana in noted Bacuranao section.
B—250 hectares adjoins the only producing oil field on Island 10 miles from Havana, Bacuranao section.
C—Two 50 hecare tracts near Matanzas. Open for proposition. W. D. Strong, Box 401, Miami, Florida.

FOR SALE: 10 acres Johnston Co., Okla. NW¼ of NW¼ of SE¼, Sec. 19, Twp. 2S, Range 8 East. Margaret S. Barry, 3505 Legation St. N.W., Washington, D. C.

Leases and Drilling Blocks

FOR SALE Oil and gas leases and small production located in Kentucky shallow field, and leases located in Clay County, Tenn. Have for sale two tracts of proven Fluorspar and Zinc deposits; reports furnished on request. W. P. Harley, Bowling Green, Kentucky.

HAVE block of leases in La Salle Parish, La. close to H. L. Hunt's new field recently brought in. Want some one to take over block and drill a well. B. A. Skipper, Longview, Texas.

NEW MEXICO
STATE OIL AND GAS LEASES
40 acres and multiples thereof. In the Hot Spots. Buy direct. Save those dollars. No middle man to pay; no salesman to bother you! Twenty years in the business without a complaint. Write for information.
HARRY S. WRIGHT
New Mexico State Lessee
Wright Bldg., Farmington, New Mexico

WEST TEXAS OIL LEASES AND ROYALTIES
If you wish to buy or sell producing or non-producing oil leases or royalties located in West Texas or Eastern New Mexico, Address:
AMERICAN NATIONAL BROKERAGE CO.
Post Office Box 516
Levelland, Texas.

DRILLING BLOCK, 10,000 acres in Huerfano County, Colo. new field. Also small leases in shallow area. Will make deal to develop. It's the coming field with gas, shallow and deep oil. S. W. Pressey, Pueblo, Colorado.

CALIFORNIA LAND IN FEE, adjoining, and in some cases completely surrounded by Major Oil Companies who own their land in fee. We have listed many small tracts at very reasonable prices that have wonderful speculative inducements for good profits.
NATURAL RESOURCES CO.
703 Central Tower Building
San Francisco, Calif.

KENTUCKY OIL PRODUCTION FOR SALE
2 wells fully equipped and producing on 51 acres of land near Fordsville, Kentucky, priced for immediate sale. Write Rietman Company, 905 Atlas Bank Building, Cincinnati, Ohio.

HAVE 8000 acre block in Evangeline Parish, La. between Ville Platte and Pine Prairie Fields, Township 3-S, Range 1-E. Want some one to take over block and drill same. B. A. Skipper, Longview, Tex.

HAVE 300 A. Proven Gas land. Gas Cont. 6c, want partner develop on 50-50 basis. Box 93, Tulsa, Okla.

Leases and Drilling Blocks

PRODUCING wells bought. Will drill proven leases. Give price, description, or no reply. Columbia Gas Co., Box 93, Tulsa, Okla.

SALESMEN & BROKERS, if interested handling real developments in shallow field Huerfano County, Colo. drilling 10 wells off-setting production. Pay off big. Write, G. A. Horney, Box 614, Pueblo, Colo.

HAVE LARGE ACREAGE IN TEXAS
Good Geology.
Want help finance well.
BOX 133, MINEOLA, TEXAS.

EXPERIENCED GEOLOGIST, DRILLING CONTRACTOR and OPERATOR. Will furnish leases with geology in Eastern Kansas near pipe lines. Average drilling depth 500 ft. Desire connection with private investors. Excellent opportunity for low cost, quick pay return development. Will carry interest with responsible parties. Lester Bailey, Paola, Kansas.

FOR SALE—Both deep and shallow oil properties. $10,000 to $1,000,000 also farms and ranches. A. R. LEWIS, Corsicana, Tex.

EAST TEXAS Paluxy-Trinity sand wildcats now drilling others starting shortly afford you chances for quick money. Leases close in. E. CROFT, Proctor, Tex.

PRODUCER OR INVESTOR ATTENTION, we have an oil structure leased which has been mapped by Frederick G. Clapp leading Geologist of the Nation. It parallels an uplift he formerly mapped now worth 20 million dollars. He states he has high opinion of this structure for production. We are in sight of wells that blow in as high as 2000 to 5000 barrels at 3300 feet. Would you like to drill or help drill this property, we can offer you a great opportunity, reports and maps will be sent without obligation, also highest references. Address Box 572, Chickasha, Okla. Telephone 220 and 2352.

5 YR. oil loans. $50,000 to $5,000,000. On production, oil payments, royalties, real estate. Low interest. Inquiries invited, L. A. (Pat) Casey, Esperson Bg., Houston; Nat. Bk. Com. Bg., San Antonio; Dan Waggoner Bg., Ft. Worth.

For Sale—Maps

R. B. ROBINSON MAPS
Jackson, Miss. 3-Hart Bldg., Across Street from Heidelberg Hotel. Ownership maps All Over Mississippi.

1940 OIL AND GAS FIELD MAP
Texas, Eastern New M. Price $1.00.
Wildcat Map $3.00 Published monthly.
ZINGERY OIL MAP CO., Fort Worth, Tex.

Royalties

ANDREW J. BARRETT
The Philtower
Tulsa, Oklahoma

Brokers—Salesmen

Sell in the most active area in the United States—The Permian Basin of West Texas and Southeastern New Mexico. From the standpoint of royalty investors this area has much to offer. Can supply you with choice non-producing royalties located on geophysical highs. Also drilling blocks, close in acreage to production, or wildcat leases. I maintain my own field men who cover this area for me. All offerings meet the requirements of the Security and Exchange Commission. Inquiries invited.

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Paul Brown Bldg., St. Louis, Mo.

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Registered with S. E. C.
INVESTMENT ROYALTIES, LTD.
Ramsey Tower, Oklahoma City, Okla.

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REFINERY PROCESS SUPT. Graduate chemical engineer. 10 yrs.' supervisory experience with major oil company. Lube Oil specialist. Address Box K-633, The Oil and Gas Journal, Tulsa, Okla.

GEOLOGIST, 14 years' experience scouting and land, seven years geologist in foreign countries with major companies desires position with small company or independent operator. Address Box K-631, The Oil and Gas Journal, Tulsa, Okla.

I KNOW something of installations and connections, bottom-hole tests, paraffin removal, mud conditioning, care of cores and samples, office work, and plain ditch digging. I'm 28, single, have three years flush production experience and 2 college degrees (not engineering). Other useful abilities, would try selling, go anywhere. Can you use me? Box 2222, Norman, Oklahoma.

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BOX K-626
OIL AND GAS JOURNAL, TULSA, OKLA.

Help Wanted

RESPONSIBLE INDIVIDUALS
$1,800 to $25,000
Use this thoroughly trained organization to locate and NEGOTIATE the kind of position you want. If you have earned $1,800 or more, write for details.
EXECUTIVE SERVICE, Inc.
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THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

25 K.W. and 40 K.W. Gas Engines, 220 volts, D.C. Two 100 K.W. Gas Engine-Generator Sets, 220 volts, D.C. 7x6 Ingersoll-Rand ER-1 Air compressor. Six-inch Oster Pipe Threading Machine. Also large stock of lathes, pipe machines, milling machines, etc. Send for our list.
Terms to suit.
CINCINNATI MACHINERY & SUPPLY CO.
26 West 2nd St., Cincinnati, Ohio

FOR SALE
Late Model K Type Star rig either with or without power, tools and light plant. The Veeder Supply & Development Co., P. O. Box 270 Phone LD 2
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MFG. RIGHTS — Patent #1851894, Oil Well control device. Make cash offer. E. Funke, 1230 W. 8th, Los Angeles, Calif.

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FOR SALE: 7 ft. x 20 ft. Butane welded storage tanks 125# WP, capacity 6000 gallons. I.T.I.O. Co., Bartlesville, Okla.

SPUDDERS FOR SALE
One 24 W Bucyrus-Erie Trailer mounted.
One 5½ Keystone Joplin Special.
One 5½ Keystone Truck mounted.
Also One 25 Steam Star. All in A-1 shape, good tools and cordage, priced right.
JACK READ
Scottsville, Ky.
Box 205.

FOR SALE—Refinery in Central Kansas. Well established, doing good business as books will show. Entering other business. Box 222, Chase, Kansas.

FOR SALE: Cable tool drilling machine complete except for tools, including steel derrick and 120 H.P. Clark drilling engine, located near Graham, Texas. Address Box 1098, Shawnee, Okla.

FOR SALE

10,000 Ft. 2½" seamless tubing, used in flowing wells only.

10,000 Ft. 7" O.D. 26# seamless casing, once run.

15,000 Ft. 4½" O.D. seamless drill pipe equipped with both regular and full hole tool joints.

In addition to the above we have 20,000 Ft. screw line pipe in Oklahoma; also drilling rig capable of drilling to 6500 feet, complete stock of line pipe, casing, drilling and pumping equipment.

Wire, Write or Phone for Prices.

Louisiana Iron & Supply Co.
Shreveport, La.

PUMPING UNIT: Complete, in Okla. City Field. Parkersburg Rig Front. Cooper-Bessemer 50 HP Gas Engine, etc. Good condition. Low price. Address Box K-634, The Oil and Gas Journal, Tulsa, Okla.

FOR SALE
COMPLETELY RE-CONDITIONED EQUIPMENT

18" x 10' Q.C. Lathe, Taper Attch.	$600.00
165 H.P. 2 cyl. Bessemer Gas Engine	1,450.00
30" Upright belt drive drill press	135.00
200 ton Upright Hydraulic Press	250.00

4" retipped seamless boiler tubes pass state inspection.
CHICKASHA IRON WORKS
Chickasha, Oklahoma.

Complete Late Type Cracking Unit

2500 bbl. thruput cracking—6000 bbl. topping and cracking. Original cost $600,000.00—Units complete in every respect. Turbine driven hot oil pumps.

Priced for immediate sale. Will dismantle and load for reerection or

Will take turnkey job for dismantling and reerection your site.

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W. C. Berry and H. J. Galamba
Riverview at Second, Kansas City, Kansas

Robt. W. Duden
2100 S. Union, Tulsa, Oklahoma

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HYMAN-MICHAELS COMPANY

Carload or LCL Shipments From Stock. All Sizes Pipe, Flues, Tubes. Diameters 1" O.D. to 24" O.D.

Special on: UNUSED WELDED PIPE

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5½	¼	403'	8⅝"	⅜	1,782'
5½"	½	4,106'	8⅝"	½	5,012'
6"	½	550'	9⅝"	⅜	1,778'
7"	¼	1,449'	9⅝"	½	679'
7"	⅜	3,060'	9⅝"	⅝	1,916'

Also small lots of 6¼, 7½, 8, 9, 11, 11¾, 12, 12¾, 13⅜, 13½, 14, 18⅝.
Extra special: 100 tons 24" - ¼" wall guaranteed 73.5# per foot.

Write — Wire — Call for Quotations

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Motor's Safe way
LUBRICATING GAS-O-LINE
AND SAVE
3 to 6c on GASOLINE.
25 to 40% Motor Expense.
Original and Genuine lubricating Anti-Knock Admixture makes cheap GASOLINE good, and high-test Gasoline better, or highest powered Gasoline on American Market. Prove it for yourself. Introductory Delivered Price 90c on $2.50 package. Responsible Dealers Wanted.
LUBRICATING GASOLINE CO., HOUSTON, TEXAS

FOR SALE all or parts 2000 ft. rotary power Rig complete with 3 inch short pipe also 5000 ft. equipment with 4 inch long pipe. Boilers. Write us your needs.
P. O. BOX 832
Oklahoma City, Oklahoma

FOR SALE at Oklahoma City Warehouse, large quantity 4¾" o.d. 16#, 5" o.d. 15# slotted-perforated liner and Stancliff screen pipe. I. T. I. O. Company. Bartlesville, Okla.

MANUFACTURER or Sales organization to distribute exclusively, a new, radically different, drill bit proved 25% to 65% more efficient than the fish tail, in all formations and depths. Liberal terms. Kless, 414 Stratford St., Houston, Texas.

USED SUCKER RODS
Have been pumping in deep wells that are being abandoned. ¾'s and ⅞'s in A-1 condition. Save 50% or more on rods. AL BROWN SUPPLY CO., Box 841, Kilgore, Tex.

GAS ENGINES FOR SALE
Two 40 Horsepower Webber Gas Engines with reversible clutch and OCS Counter shaft. Located Ritz Canton field, McPherson County. Simon Lebow, Hunt Bldg., Phone 3-7960, Tulsa, Okla.

FOR SALE—Heavy standard string of tools, from 18 inch down. No junk dealers. P. O. Box 401, Sapulpa, Oklahoma.

WIELAND PIPE THREADERS
Exceptional opportunity to purchase 4, 6, 12 and 18-inch little used machines in fine condition with perfect dies.
CHAS. F. WIELAND
199 Hillcrest Rd., Berkeley, Calif.

FOR SALE: Star #28 beam steam machine lines and tools complete. Box 592, Emporia, Kansas.

FOR SALE

MILLER IMPROVED 85 H.P. TWIN CYLINDER NATURAL GAS ENGINE—EXCELLENT CONDITION. WILL SACRIFICE FOR IMMEDIATE DISPOSAL.

THE BASSICHIS CO.
2323 W. 3RD ST.
CLEVELAND, OHIO

5W Bucyrus-Monighan Diesel Walker Dragline 100 foot boom, 6-yard bucket.
45B Bucyrus-Erie Diesel Dragline, 65 foot boom, 2-yard bucket.
52B Bucyrus-Erie Diesel Dragline, 60 foot boom, 3-yard bucket.
150 P&H Dragline, 30 foot boom, ½-yard bucket with trailer.
D8 Caterpillar Tractor with Bulldozer.
All in splendid operation condition. Completed contracts. Priced to Sell. Address Box K-630, The Oil and Gas Journal, Tulsa, Okla.

TUNGSTEN CARBIDE inserts and tube stock hard facing can be manufactured economically in your own plant. No big investment necessary. Write for plans and full particulars as to process data and formulas from manufacturer of nationally known product. No infringements. Address Box K-620, The Oil and Gas Journal, Tulsa, Oklahoma.

Equipment Wanted

WANTED—Two used Clark 12 in. bore by 14-in. stroke double acting compressor cylinders complete. Type RA-2S. Address Hanley and Bird, Bradford, Pennsylvania.

Survey Service

REMEMBER EAST TEXAS
When all other methods fail, employ my divining or dowsing method. If oil exists this method finds it. Faults, broken treacherous areas accurately defined. Our Watson #2, first producer Wilmington, Calif. field, located by this method. More reliable than mechanical geophysics. Ask any unbiased oil authority. Many years' experience. A wise man investigates. George Miller, 1548 Post, Torrance, California.

HOMER L. FITCH, GEOPHYSICIST AND LOCATION ENGINEER
WHY? Drill a dry hole? Our method only locates structures which contain oil or gas. Locations made by us will produce or no pay. Write Drawer 711, Brownsville, Texas.

Incorporations

DELAWARE CHARTERS: Complete service $35. Submitted forms. Chas. G. Guyer, Inc., Wilmington, Delaware.

CAPITAL SEEKERS
Put your project before 260 Key-Men. Cost trifling. Details free. AMSTER LEONARD, Fox Theater Building, Detroit, Michigan.

Financing

JOHN MORRIS, Box 5411, Philadelphia, studied records 5000 financial houses. Found only 191 buy new issues. $4.00.

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BURKHART'S legal blanks and general forms serving Mid-Cont. oil field since 1908—Okla. Kans. N. Mex. Tex. Ala. Ark. Fla. Ga. Ill. Ind. Ky. La. Mich. Miss. Mo. Neb. N. Dak. Tenn. Wyo. Free catalog, samples on request. Burkhart Ptg. & Sta. Co. 115 S. Cinn. Tulsa, Oklahoma.

Oil Industry Printing

OIL FIELD LEGAL BLANKS
Leases, assignments, releases, township plat books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

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ROYALTY Owners, Oil Investors, Unit Holders, Stockholders in Oil, Royalty and Mining Companies. Personnel lists of every branch of oil industry. All by states. We buy or swap lists. Oil Industry Mailing List Co., Tulsa Loan Bldg., Tulsa, Okla.

Gulf Coast Markets

(Continued from Page 105)

cargo markets, bunker postings for fuel oil and diesel oil were cut 10 cents and 20 cents, respectively, at Gulf Coast ports the past week. These cuts make the new market 80 cents for Bunker C fuel and $1.50 for diesel-oil bunkers.

No additional softening of the cargo market for fuel oil was indicated, this holding around 75 cents, except for scattered offerings as low as 72 cents. The general market for fuel and burning oils, while easy as compared with the acute tightness which existed up to a few weeks ago, still is not regarded in particularly bad shape.

There is a fair movement of both fuel and burning oils from Gulf Coast ports to the Atlantic seaboard, and no great quantity of distress material has appeared. Most suppliers report their stocks of these products are not excessive, although they are open to new business. Weakening of prices at this time is attributed largely to the availability of Mexican oils from certain sources at prices below those for domestic material.

Sources handling Mexican oil are known to have heavy stocks, and while this oil originally was not intended for this country's markets, the export situation is such that it has been found necessary to move some of this oil, by paying the tariff, to domestic trade.

Refiners still are able to get 4½ cents for good kerosene, and movement is fair. Spot market sales are limited, but sources of supply are not plentiful. No. 2 fuel is fairly steady at 3½ cents, with several refiners holding for 3⅝ cents. While there is a seasonal slackening in demand, the volume of material going to storage is not considered serious.

How long refiners can continue to hold out in the squeeze between constantly accumulating gasoline stocks and inactive markets remains a question on the Gulf Coast. All say their tanks are overflowing, yet it is known there has been no important increase in movement out of the district, despite the fact that summer consumption should be making inroads on supplies in the East and North.

Gasoline quotations, such as they are, continued unchanged during the week.

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